

IGNACIA S. MORENO
Assistant Attorney General
TERRY M. PETRIE, Attorney
STEPHEN R. TERRELL, Attorney
United States Department of Justice
Environment and Natural Resources Division
Natural Resources Section
999 18th Street, South Terrace, Suite 370
Denver, CO 80202
Telephone: (303) 844-1369
Facsimile: (303) 844-1350
Terry.Petrie@usdoj.gov
Stephen.Terrell@usdoj.gov

DANIEL G. BOGDEN
United States Attorney\
NADIA AHMED
Special Assistant United States Attorney
333 Las Vegas Blvd. South, Suite 5000
Las Vegas, NV 89101
Telephone: (702) 388-6336
Facsimile: (702) 388-6698

ATTORNEYS FOR THE UNITED STATES

**IN THE UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA**

UNITED STATES OF AMERICA,

Plaintiff,

v.

CLIVEN BUNDY,

Defendant.

No. 2:12-cv-804-LDG-GWF

**DECLARATION BY
ALICE C. NEWTON**

DECLARATION BY ALICE C. NEWTON

I, Alice C. Newton, do declare as follows:

I have personal knowledge of the matters set forth in this declaration.

1. I am the Vegetation Branch Chief for the United States Department of the Interior, National Park Service (NPS) at Lake Mead National Recreation Area (Lake Mead NRA). I have served in my current position since June 2005 and have worked for the NPS since August 1991, all of that time at Lake Mead NRA. Prior to my current position, I was employed as a Biological Technician (1991 to 1998) and a Natural Resource Specialist (1998 to June 2005) at Lake Mead NRA. My responsibilities as Vegetation Branch Chief include supervising up to 10 employees, either Biologists or Biological Technicians, and management of soils, rare and exotic plants, plant propagation and restoration, grazing management, and the response to impacts from grazing within Lake Mead NRA.
2. As part of my responsibilities, I am personally familiar with the current conditions, status, and trends of the vegetation and soils within the portion of Lake Mead NRA affected by trespass and stray cattle which includes the west side of the Overton Arm of Lake Mead from Echo Bay north to the northern boundary of Lake Mead NRA and along the east side of the Overton Arm of Lake Mead to the Arizona state line, and referred to as the Overton Arm/Gold Butte Area (Overton Arm/Gold Butte Area). The Overton Arm/Gold Butte Area corresponds to the area marked as "New Trespass Lands" and "Former Bunkerville Allotment" within Lake Mead NRA shown on the map attached to this declaration as Attachment A. Also as part of my responsibilities, I routinely review and read reports or attend oral presentations and briefings by Lake Mead NRA staff supervised by me on the conditions of vegetation and habitats within the Overton Arm/Gold Butte Area, the presence of cattle within Lake Mead NRA, and any damage or other impacts from cattle to vegetation, habitats, and other resources within the Overton Arm/Gold Butte Area of Lake Mead NRA.
3. I am familiar with the brands and earmarks assigned to Cliven Bundy. A copy of the relevant page from the Nevada Brand Inspector's book is attached as Attachment B. I have provided all of my staff that work or have worked in the Overton Arm/Gold Butte Area with copies of this page, and instructed them on how to identify Mr. Bundy's brand and earmarks.
4. As the Vegetation Branch Chief, I am responsible for the management of several rare and endangered plant species and habitat management for several rare and endangered animal species for the NPS in the Overton Arm/Gold Butte Area. Some of my duties include conducting annual surveys of rare plants to determine status, condition, and trends and surveys of habitat as the need arises or in response to a request by other Lake Mead NRA management or staff. If the plant or habitat surveys indicate that further management action is warranted, I initiate those actions or make requests to Lake Mead NRA management that actions be taken.
5. The Overton Arm/Gold Butte area contains the following endemic, sensitive and rare plant species that may be directly and indirectly affected by cattle: sticky buckwheat

(*Eriogonum viscidulum*); Las Vegas bearpoppy (*Arctomecon californica*); sticky ringstem (*Anulocaulis leiosolenus* var. *leiosolenus*); threecorner milkvetch (*Astragalus geyeri* var. *triquetrus*); Mokiak milkvetch (*Astragalus mokiaceus* var. *Gold Butte*); Virgin River thistle (*Cirsium virginensis*); silverleaf sunray (*Enceliopsis argophylla*); Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*); and Beaver Dam breadroot (*Pediomelum castoreum*). Sticky buckwheat, Las Vegas bearpoppy, sticky ringstem, and threecorner milkvetch are listed as Covered species under the Clark County Multiple Species Habitat Conservation Plan (MSHCP). The other five are listed as Watch species in the MSHCP. Lake Mead NRA contains the largest known populations of sticky buckwheat; the most undisturbed habitat for Las Vegas bearpoppy; the largest known populations of threecorner milkvetch; and almost the entire known population of silverleaf sunray. Within Lake Mead NRA, these plants occur mostly in the Overton Arm/Gold Butte Area.

6. NPS staff at Lake Mead NRA supervised by me have documented direct damages from cattle to sticky buckwheat (described in paragraph 5 above) from grazing, trampling, defecation, and wallowing, resulting in the death or significant injury to individuals or populations of these rare plants.
7. The Overton Arm/Gold Butte Area also contains habitats which are extremely rare in the Mojave Desert and may be directly and indirectly affected by cattle, including:
 - a. Biological soil crusts, consisting of mosses, lichens, and cyanobacteria combined into a living soil cover that help keep sensitive gypsum soils in place, fix nitrogen, and repel weeds. They provide cover for many microarthropds and are very resistant to water and wind erosion but extremely vulnerable to trampling and other anthropogenic disturbance.
 - b. Alkali meadows and aquatic herb communities, a mix of salt-loving species which grow in heavily alkaline soils where small springs and seeps maintain permanent meadows, pools and sinks.
 - c. Desert oasis woodlands, where perennial water seeps from hillsides and mountains, forming streams and pools which support woody species such as cottonwoods, willows, mesquites, and acacia.
 - d. Gypsum barren scrub, a plant community that is open, low density, and shrub dominated on gypsic soils. Many of Lake Mead NRA's rare plants occur in this habitat, which are very vulnerable to disturbance.
8. NPS staff at Lake Mead NRA supervised by me have documented direct and indirect damages from cattle to biological soil crusts and gypsum barren scrub (described in paragraph 7 above) from grazing, trampling, defecation, and wallowing, resulting in the death or significant injury to biological soil crusts, and significant injury to plant communities where cattle walk and gather.

9. NPS staff at Lake Mead NRA supervised by me have documented direct and indirect damages from cattle to other soils, plants, and plants communities (other than those described in paragraphs 5 and 7 above) from grazing, trampling, defecation, and wallowing, resulting in the death or significant injury to plants and plant communities, and structural damage and instability to soils where cattle walk and gather.
10. All of the plants, plant communities, soils and biological soil crusts in the Overton Arm/Gold Butte Area, including those described in paragraphs 5 and 7 above, are important habitat for the Desert Tortoise, Southwestern Willow Flycatcher, relic leopard frog, migratory birds, bighorn sheep, and other wildlife.
11. I and Lake Mead NRA staff supervised by me have routinely observed and documented occurrences of trespass and/or stray cattle in the Overton Arm/Gold Butte Area over the last decade, including the particular documentation set out below in paragraphs 12 through 26. Some of these documented cattle have brands and/or earmarks registered to Cliven Bundy by the State of Nevada Department of Agriculture.
12. In August 2007, Meredith Gosejohan and Adessa Schwartz, former Lake Mead NRA staff supervised by me, documented cattle trails, defecation, and trampling on sticky buckwheat (*Eriogonum viscidulum*) in Lime Cove, Cattle Cove, Glory Hole, and Kline Hole, which are located on the east side of the Overton Arm of Lake Mead within the Overton Arm/Gold Butte Area. A true and correct copy of the report of this incident prepared by Meredith Gosejohan and Adessa Schwartz is attached to this declaration as Attachment C, pages 7-8.
13. On September 12, 2007, Meredith Gosejohan and Adessa Schwartz, former Lake Mead NRA staff supervised by me, documented heavy damage to park resources from cattle in addition to a dead calf at Fisherman's Cove at the end of NPS Road AR 113, which is also known as Fisherman's Cove Road outside of Lake Mead NRA. Fisherman's Cove is located on the east side of the Overton Arm of Lake Mead within the Overton Arm/Gold Butte Area. The damage consisted of cattle feces, cattle tracks and compaction of the soils, and hay spread over the ground. A true and correct copy of the report of this incident prepared by Meredith Gosejohan and Adessa Schwartz is attached to this declaration as Attachment D.
14. On February 17, 2009, I participated in an aerial survey by fixed wing aircraft over the Overton Arm/Gold Butte Area-- one day of a multi-day (February 11-13, 17, 2009) aerial survey of cattle within Lake Mead NRA in which I participated. The following Lake Mead NRA staff also participated in the survey: Chris Roberts, Bruce Lenon, and Toshi Yoshida. Chris Roberts and Toshi Yoshida are former Lake Mead NRA staff supervised by me. A true and correct copy of the report of the aerial survey prepared by Chris Roberts is attached to this declaration as Attachment E. Pages 5 and 6 of Attachment E pertain to cattle within the Overton Arm/Gold Butte Area. A true and correct copy of a report that I prepared showing the locations of the cattle is attached to this declaration as Attachment F. We documented a total of 87 head of cattle within the boundaries of Lake Mead NRA in the Overton Arm/Gold Butte Area as shown on the map on page 6 of

Attachment E. More specifically, we documented cattle starting on the west side of the Overton Arm, as follows and shown on the map by blue circles: 12 head on Ann Margaret Beach south of the Overton Beach Road, 3 head in Overton Beach housing at the end of Overton Beach Road, one bull near AR110 near St. Thomas, 17 head just north of Virgin River bowl, 20 head near Fish island, 6 head in Lime Cove, 2 head at Glory Hole Beach, 18 head just north of Glory Hole, and 8 head in Catclaw Wash just north of Catclaw Wash Road (AR 122). All of these locations are within the Overton Arm/Gold Butte Area of Lake Mead NRA. Because the survey described in this paragraph was conducted from a plane, we were not able to identify whether there were any brands or earmarks on the cattle.

15. On March 4, 2010, Eric Cotto and Toshi Yoshida, former Lake Mead NRA staff supervised by me, documented over 10,000 linear feet of new off-road vehicle tracks that followed cattle tracks near the end of AR112A near the Virgin River, most likely related to cattle round up activities. The Lake Mead NRA staff observed seven head of cattle in the vicinity of the tracks.
16. In November of 2010, the Lake Mead NRA archeologist requested that my staff construct approximately 1.6 miles of t-post and barbed-wire cattle exclosure fence around sensitive archeological sites near The Pueblo Grande de Nevada, also known as "Lost City", which is located near the confluence of the Muddy and Virgin Rivers within the Overton Arm/Gold Butte Area in Lake Mead NRA. This fence was constructed in January and February of 2011 to help protect these sites from cattle damage and to help protect NPS staff, contractors, and researchers from aggressive cattle. A true and correct copy of a letter from the NPS to the State of Nevada Historic Preservation Office (SHPO), dated October 20, 2010, in which the NPS described the potential threats posed by cattle to the Lost City site and the reasons for undertaking the proposed fencing is attached to this declaration as Attachment G. A return letter from the Nevada SHPO, dated November 10, 2010, concurring in the fencing project is attached to this declaration as Attachment H.
17. On January 6, 2011, during the Lake Mead NRA annual bald eagle survey I observed approximately 20 head of cattle just north of Stewarts Point, 14 head just north of Salt Cove, approximately 7 head at Ann Margaret Beach, plus many more inland north towards Overton Beach that were too far away to count or photograph well. All of these cattle were within the Overton Arm/Gold Butte Area within Lake Mead NRA. Because of the distance to the cattle, I was not able to identify whether there were brands or earmarks on the cattle. These observations were made from a boat near the shoreline. True and correct copies of maps prepared by me showing locations of these observations and copies of photographs taken by of these animals are attached to this declaration as Attachment I.
18. On February 15, 2011, I participated in an aerial survey by fixed-wing aircraft which documented 120 head in the Overton Arm/Gold Butte Area. The following Lake Mead NRA staff also participated in this survey: Chris Roberts, Bruce Lenon, and Cody Cole. Chris Roberts is a former Lake Mead NRA staff member supervised by me. A true and

correct copy of a report that I prepared showing the locations of the cattle is attached to this declaration as Attachment J. More specifically, we documented cattle as shown on the map at page 2 of Attachment J by red dots as follows: 14 head in Fire Cove Wash; 11 head north of Fire Cove Wash; 9 head in Valley of Fire Wash; 10 head east of State Route 169; 1 head south of Overton Beach Road; 7 head at the end of the Overton Beach Road; 5 head near the St. Thomas townsite; 13 head north of the St. Thomas townsite; 13 on the east side of the Overton Arm across from Overton Beach; 3 head north of Glory Hole; 9 head in Glory Hole; and 25 head in and near Preachers Cove. All of these locations are within the Overton Arm/Gold Butte Area of Lake Mead NRA. Five head were also observed just outside Lake Mead NRA near AR 112A. Because the survey described in this paragraph was conducted from a plane, we were not able to identify whether there were any brands or earmarks on the cattle.

19. On March 21 – 24, 2011, Eric Cotto and Chris Roberts, both former Lake Mead NRA staff supervised by me, and I participated in an aerial and ground survey of trespass cattle conducted by the BLM on public lands administered by BLM and on federal lands within Lake Mead NRA administered by the NPS. I was NPS Liaison to the BLM and stationed at the Incident Command Center near the Whitney Pockets in Gold Butte, Nevada. Mr. Cotto and Mr. Roberts were part of the staff on the ground in the Overton Beach area. Their job was to travel on foot or by vehicle to cattle located by BLM helicopter and verify the presence and number of cattle, identify brands or earmarks if possible, and photograph the cattle.
20. On May 16, 2011, Corey Houston, an associate of Cliven Bundy, called me to discuss gaining access to the closed Overton Beach Developed Area, which is at the end of the Overton Beach Road, and placing a temporary corral in order to remove Mr. Bundy's cattle from that area of Lake Mead NRA. I met with Mr. Houston on May 18, 2011, at the Overton Beach Road gate, which closes the road to public access. I allowed Mr. Houston to place a temporary corral on or near the launch ramp at Overton Beach Developed Area (within the Overton Arm/Gold Butte Area), place his lock on the gate for access, use horses and dogs to gather the cattle, and use hay, salt, and lake water as needed only until the cattle were removed from Lake Mead NRA.
21. On January 30, 2012, I participated in a fixed wing aerial and ground survey which documented over 32 head of cattle in the Overton Arm/Gold Butte Area. Bruce Lenon, Lake Mead Law Enforcement Ranger and Pilot, conducted a brief aerial survey and the remaining participants including myself conducted ground surveys. Because part of the survey described in this paragraph was conducted from a plane, Mr. Lenon was not able to identify whether there were any brands or earmarks on the cattle seen from the plane. Other Lake Mead NRA staff who participated were Ashley Pipkin, Tiffany Pereira, Stephen Neel, Brian Wollenberg, Kelly Wallace, Dara Scherpenisse, and Carrie Norman. On the ground, I observed a herd of 13 cattle near the intersection of Overton Beach Road and Northshore Road, where I could see four of the cattle to have ear markings registered to Cliven Bundy intermixed with cattle that did not appear to have brands or earmarks. I instructed Ashley Pipkin to take photographs of the cattle. Later, I enlarged several of the photographs to confirm that four animals had Bundy earmarks. A true and

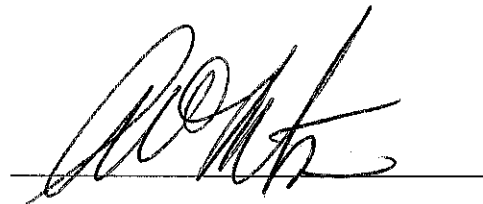
correct copy of a report prepared by me, including the photographs, a map of the results of the aerial survey, and survey datasheets is attached to this declaration as Attachment K. The photographs that I enlarged and that show cattle with Bundy earmarks are on pages 2-5 of Attachment K.

22. On January 30 and February 14, 2012, Dara Scherpenisse, Kelly Wallace, and Henry Weckesser from my staff conducted a survey and assessment of cattle damage on approximately 1920 acres located between the intersection of the Overton Beach Road and Northshore Road, and Overton Beach. This assessment documented approximately \$45,000 damage to natural resources on federal lands within Lake Mead NRA. Mr. Bundy's cattle that are described in Paragraph 21 of this declaration above were located less than one quarter mile from this assessment area and were running towards the assessment area. A true and correct copy of this damage assessment prepared by my staff is attached to this declaration as Attachment L.
23. On February 13, 2012, I participated in an aerial fixed wing survey which documented 45 cattle in the Overton Arm/Gold Butte Area. Other NPS participants included Bruce Lenon, Ashley Pipkin, and Tiffany Pereira. Ashley Pipkin and Tiffany Pereira are Lake Mead NRA staff supervised by me. More specifically, we documented cattle as follows: 3 head near Fire Cove, 5 head at Overton Beach, 9 head north of St. Thomas townsite, 3 head at Beismeir Beach, 7 head at Lime Cove, 4 head south of Lime Cove, and 14 head near Twin Springs wash. Each of these locations is within the Overton Arm/Gold Butte Area in Lake Mead NRA. Because the survey described in this paragraph was conducted from a plane, we were not able to identify whether there were any brands or earmarks on the cattle. A true and correct copy of the map prepared by me showing the locations of the cattle is attached to this declaration as Attachment M.
24. On March 19 and 20, 2012, Karen Maloof, Lake Mead NRA staff supervised by me, documented damage from cattle to sticky buckwheat and habitat in Lime Cove. On April 18, 2012, Carrie Norman, Lake Mead NRA staff supervised by me, documented damage from cattle to sticky buckwheat and habitat near the Valley of Fire powerline road. Both of these locations are within the Overton Arm/Gold Butte Area. A true and correct copy of a report prepared by Carrie Norman documenting the damage with photos is attached to this declaration as Attachment N.
25. On July 10 and 11, 2012, Carrie Norman, Ashley Pipkin, and Henry Weckesser, Lake Mead NRA staff supervised by me, documented cattle in the Kline Hole area of Lake Mead and other locations on the east side of the Overton Arm of Lake Mead, all within the Overton Arm/Gold Butte Area. One cow had an earmark assigned to Cliven Bundy. A true and correct copy of a report prepared by Ashley Pipkin showing the locations of the cattle with photographs is attached to this declaration as Attachment O. The photograph of the cow with Mr. Bundy's earmark is found on page 7 of Attachment O.
26. On July 30, 2012, I participated with other Lake NRA staff in a survey of cattle using boats, fixed-wing aircraft, and vehicles in the Overton Arm/Gold Butte Area on the upper east side of the Overton Arm of Lake Mead and the Overton Beach Developed Area. I

observed six animals in Glory Hole from a boat near the shoreline. I could not identify any brands or earmarks on the cattle.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.

Signed this 18th day of Dec., 2012 at Boulder City, Nevada.

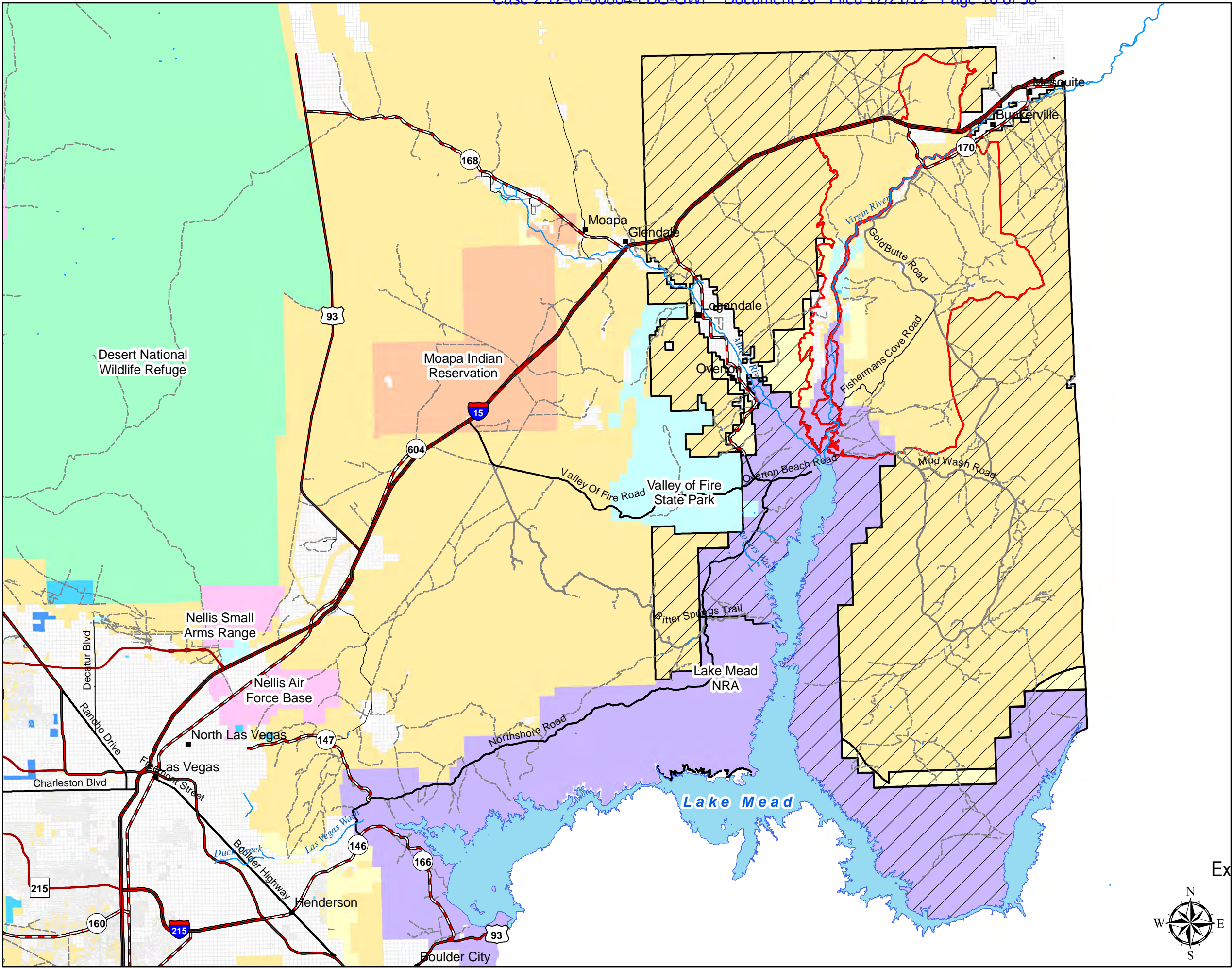


Alice C. Newton

ATTACHMENT A TO DECLARATION BY ALICE C. NEWTON

United States v. Bundy, No. 2:12-cv-804-LDG-GWF

Bundy Cattle Trespass Overview



Legend

Former Bunkerville Grazing Allotment	Bureau of Indian Affairs
New Trespass Land	Bureau of Land Management
City Location	Bureau of Reclamation
NHD Hydrology	City of Las Vegas
Major Road	Clark County, NV
Interstate	Department of Defense
US Highway	Department of Energy
State Highway	Fish and Wildlife Service
County Highway	Forest Service
Arterial	National Park Service
Collector	Nevada State
Local	Private
Back Country Byway	Lake Mead
Resource	
Restricted	

Prepared for
United States of America
v. Bundy
No. 12-cv-804
Not intended for any other use

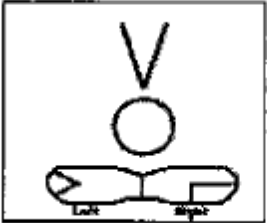


Ex. 6 - Newton Dec. Att. A - Page 1 of 1



ATTACHMENT B TO DECLARATION BY ALICE C. NEWTON

United States v. Bundy, No. 2:12-cv-804-LDG-GWF

Cattle	Horse	Elko County, Statewide
12778	(702) 346-5564	Exp. Date: 12/31/2007
		Cliven D Bundy P O Box 7175 Bunkerville, NV 89007
Location		V OVER O
LH	LST	
Cattle	Horse	Clark, Lincoln County, Statewide

ATTACHMENT C TO DECLARATION BY ALICE C. NEWTON

United States v. Bundy, No. 2:12-cv-804-LDG-GWF

Effect of Grazing Deterrent Exclosures on herbivory of *Eriogonum viscidulum* at Cattle Cove

Meredith Gosejohan and Adessa Schwartz

Great Basin Institute

Lake Mead National Recreation Area

August 30, 2007

Abstract

Eriogonum viscidulum (sticky buckwheat) is an endemic plant that occurs along the eastern shoreline of Lake Mead's Overton Arm, from Kline Hole south to Lime Cove. The number of plants in this population has been declining since 2005 (Bangle 2007). Roaming cattle and burros in the area led researchers to install a series of exclosures around *E. viscidulum* plants at Cattle Cove, south of Glory Hole. Six exclosures and six paired control plots were established to assess the effects of cattle grazing on *E. viscidulum* plants. During May and June 2007, this *E. viscidulum* population and research site was monitored for plants, herbivory, and cattle damage. Data analysis revealed no significant difference in herbivory between the exclosures and paired control plots ($p>0.05$). Observed evidence of cattle damage included feces, trampling, and grazing on native plants in the surrounding areas. Areas of heaviest cattle use and damage were nearest the dropping lake level and north of the *E. viscidulum* research area. Although cattle grazing may not have an effect on *E. viscidulum* plants, trampling and defecating by cattle could affect future population sizes and potentially lead to extirpation of the plant in this area.

Introduction

Eriogonum viscidulum (sticky buckwheat) is an annual endemic plant of Clark and Lincoln Counties in southern Nevada and Mojave County in northwestern Arizona (Howell 1942). *E. viscidulum* is listed on the Nevada Natural Heritage Programs Sensitive List, as G2 S2, which is defined as imperiled (Bangle 2007). Additionally, *E. viscidulum* is listed as a critically endangered species in the state of Nevada (Bangle 2007).

One population of *E. viscidulum* occurring on the eastern shoreline of the Overton Arm along Lake Mead in Lake Mead National Recreation Area (NRA) has been monitored since 1997. During the period of monitoring from 2004 to 2006, the number of *E. viscidulum* plants counted has generally declined (Table 1). Field personnel documented a perceived increase in the number of feral cattle in the vicinity over the same period of time. One cove, in particular, was dubbed "Cattle Cove" due to the regular presence of cattle there. The *E. viscidulum* population decrease coupled with an increase in the number of cattle prompted managers to question the interactions between *E. viscidulum* and feral cattle.

In addition to *E. viscidulum*, the research area is potential habitat for desert tortoise (*Gopherus agassizii*); listed federally as a threatened species. The desert tortoise is also a species

of concern under the Clark County Multiple Species Habitat Conservation Plan (MSHCP). Feral cattle may have negative impacts on desert tortoise; however this study was designed to capture the effect of cattle grazing on *E. viscidulum*.

Methods

On May 20, 2007, six cattle exclosures and six paired control plots were constructed near Glory Hole at Cattle Cove (Fig. 1 and Fig. 2) in an attempt to identify cattle grazing effects on *E. viscidulum* plants. To qualify for exclosure or control plot selection, researchers had to find at least three *E. viscidulum* plants within a five-by-five meter area. The first areas found within the guidelines were selected for the experiment. Each of the exclosures measured five-by-five meters each with one 5.5-foot t-post at each corner. To complete the exclosures, three strands of wire were used: one bottom strand of smooth wire measuring 18 inches from the ground, and two top strands of barbed wire measuring approximately 8 inches apart. Each exclosure was paired with an open five-by-five meter control plot for comparative analysis. The paired control plots were marked with a piece of rebar, one foot in length, at each corner. Some of the control plot corner markers were flagged for future recognition. A Global Positioning System (GPS) was utilized to collect coordinates at one corner on each of the exclosures and paired control plots. Signs were placed on the exclosures to inform the public of the research and deter vandalism of the research area. All of the exclosures and paired control plots were located outside of a proposed wilderness area which begins 300 feet above high water level (Fig. 1).

Exclosures and control plots were monitored at least one time per week while *E. viscidulum* was flowering. Researchers recorded cow and burro presence and damage, total number of plants, number of plants browsed in the research area, and other evidence of wild species presence such as rabbit scat, ant activity, and animal tracks (Appendix 1). For the purposes of this study, cattle evidence was defined as the presence of cattle tracks, feces, herbivory, or vegetation trampling. Areas classified as having heavy cattle damage exhibited a combination of all four of these features. Researchers removed the exclosure wire on July 25, 2007, however t-posts were left in the ground for anticipated annual monitoring.

Statistical Analyses. The mean percentage of herbivory was calculated for exclosures and paired control plots for each day monitored. Differences in treatment means by date were tested using paired sample t-tests.

Results

Paired sample two-tailed t-tests for differences in means showed no significant difference in herbivory between the exclosures and paired control plots at any date ($p > 0.05$). Herbivory fluctuated within exclosure and control plots and herbivory between plots remained insignificant over time (Fig. 3). Therefore, grazing by cattle did not seem to affect *E. viscidulum* herbivory at this site during the period observations were made.

Observations

Cattle were documented in Cattle Cove near the research area prior to the installation of the exclosures (Fig. 4), however cattle were not seen regularly in the area while the monitoring took place (Table 2). Five cows, including one calf, were seen on May 31 at Cattle Cove (Fig. 5). The cattle that were present at the site were seen feeding on *T. ramosissima* and laying in the shade of the taller *T. ramosissima* trees. Once cattle sightings ceased in the *E. viscidulum* potential habitat areas, there was no observable increase in damage, suggesting the cattle had moved to a different region. Recent cattle damage was apparent in areas nearest the dropping lake level and north of Kline Hole across from Overton Beach. Numerous cows were seen north of Kline Hole (Fig. 6) while performing visual surveys from the boat during the survey period. Near this area, a small herd of cows was seen within approximately 200 feet of three houseboats that were occupied. As the Lake Mead water level dropped, cattle were sighted further south from where they were documented earlier in the season and in previous years.

During the monitoring period, *E. viscidulum* plants were found to occur well above the current Lake Mead water level in rocky upslope regions. Most populations were found near and immediately below high water level. The primary areas of cattle damage were along the shoreline at water's edge and in *Tamarix ramosissima* (tamarisk or salt cedar) infested areas. Overall, heavy cattle damage and use was found in sandy areas, while *E. viscidulum* was seen in rocky higher elevation areas. According to documentation from 2004 through 2007, some areas where cattle damage was found did overlap with past populations of *E. viscidulum* and potential habitat areas (Fig. 1).

Lepus californicus (black-tailed jackrabbits) and *Ammospermophilus leucurus* (white-tailed antelope squirrels) were seen in the research area and other *E. viscidulum* population locations. Ants (unidentified species) were frequently seen crawling on *E. viscidulum* plants,

though their relationship is unknown. Rabbit scat and several other scat specimens, thought to be *Sauromalus ater* (chuckwalla) and *Neotoma* sp. (pack rat), were seen inside the exclosures and paired control plots. *Equus asinus* (wild burro) dung and trails were present in the research area, but they were not fresh and, likely, not from this season. No burros were seen within the *E. viscidulum* population sites during the 2007 growing season, although they were seen north of Kline Hole.

Herbivory of *E. viscidulum* appeared to be selective of individual inflorescences, leaving the basal leaf rosettes intact, inferring that smaller animals had been browsing on the plants. Even though they were browsed, most of the plants still produced flowers and set seed. Associated vegetation seen in the exclosures and paired control plots includes: *T. ramosissima*, *Bromus madritensis* ssp. *rubens* (red brome), *Phacelia crenulata* (wild heliotrope), *Plantago ovata* (desert indianwheat), *Palafoxia arida* (desert palafox), *Cryptantha ambigua* (basin cryptantha), *Sphaeralcea ambigua* (desert globemallow), and *Schismus arabicus* (Arabian grass).

It appears that *E. viscidulum* germinates earlier than previously thought and the flowering period extends longer than previously recorded, even during drought years. Photos were taken of *E. viscidulum* in flower dating back to April 5, before researchers could definitively identify the plant (Fig. 7). Relatively few *E. viscidulum* plants were still flowering when researchers stopped monitoring the area on June 27.

Discussion

To identify the relationship between cattle damage and *E. viscidulum*, this project should be repeated and expanded in future years. A greater number of exclosures and paired control plots should be placed in areas of higher *E. viscidulum* densities and areas with more extensive cattle damage. Two locations that fit this description are just north of Lime Cove (Fig. 1). Since *E. viscidulum* is an annual plant, the exclosure placement would depend on the plant locations during that year. Five-by-five meter exclosures appear to be effective at keeping cattle and burros out of the research area, as there was no evidence of breaches in the wire. The exclosures should be installed as soon as the plants germinate to prevent the possibility of early herbivory effects. Therefore, researchers should be monitoring the population sites in March and looking for *E. viscidulum* plants.

Due to extremely high temperatures from May through July, the availability of a kayak or canoe would be very helpful for researchers to access nearby coves. This would help researchers save energy and stay cool without climbing steep and difficult terrain.

A specific monitoring protocol should be established before the start of the project (Appendix 1) and discrepancies between data collectors should be resolved. The first two weeks of data collected in 2007 had to be disregarded due to discrepancies between researchers collecting the data. The *E. viscidulum* monitoring method to determine the total number of plants in a given area was changed in 2007 to allow researchers to more easily count and extrapolate plant numbers. The change in *E. viscidulum* monitoring methods is not associated with this exclosure study.

The eastern shoreline of the Overton Arm is frequently utilized by recreational boaters during the summer. As evidenced by the close proximity of cattle to houseboats, the cattle may be acclimating to humans and their presence in the area. This could lead to more frequent interactions between visitors and potentially dangerous feral animals.

In the future, more attention should be given to cattle behavior and movement along the Overton Arm. In the spring, observers noted that groups of females and groups of males were seen independently of each other, whereas in the summer the groups were much larger and consisted of both sexes. It would be beneficial to document the movement and behavior of cattle in the region to better protect the natural resources of the area.

E. viscidulum population numbers vary from year to year and fluctuations in annual precipitation could be a major determinant in this variation. Annual precipitation data and *E. viscidulum* numbers should be correlated to assess the relationship between these variables. Future experiments could focus on similarities and differences in *E. viscidulum* distribution between population location areas with and without the presence of feral cattle. A study identifying the correct species of ants present on *E. viscidulum* plants and examining their potential relationship would be of value. Future research could also examine the impacts of cattle, such as trampling and feces, on soil substrates and nutrient content.

Conclusions

Cattle can be very damaging to the ecosystem due to the amount of feces, trampling, and grazing as seen on other native plants, such as *S. ambigua* and *Ambrosia dumosa* (white

bursage), in the surrounding areas. Although *E. viscidulum* plants still flowered and set seed in their historic locations, cattle damage could potentially threaten the habitat of this species in the future. The relationship between *E. viscidulum* and feral cattle on Lake Mead NRA should be examined in greater depth to determine the effects of their presence.

Appendix 1

Specific Monitoring Protocols. Each *E. viscidulum* plant inside an exclosure or paired control plot was counted. On the datasheet, tally marks were used to indicate the number of plants alive, dead and browsed or broken. Cattle, burro, rabbit and other animal evidence (e.g. feces and tracks) were noted if it was seen inside or near exclosures or paired control plots. Unknown scat was collected for later identification. Plants were counted if 50% of the root base was inside the plot. Broken stems were counted as browsed, although they could have been broken off by the wind or affected by other factors. Plants that had flowers or were green were counted as alive, while red stemmed dry plants were counted as dead. The site was monitored at least once a week during the duration of the project (about six weeks beginning at the end of May through June). Researchers were generally in the habitat location areas from 6:30 a.m. until 2:30 p.m. on Monday through Thursday.

Appendix 2

Table 1. Total number of *E. viscidulum* plants counted in past survey years from Kline Hole south to Lime Cove

Year	Number of <i>E. viscidulum</i> Plants
2004	3480 (with the exception of Kline Hole)
2005	11041
2006	1062
2007	Still being processed at the time of this report*

*Note: the monitoring protocols were modified for the 2007 season; therefore the numbers will not reflect an accurate change in total number of plants from 2006 to 2007.

Table 2. Cattle Sightings in 2007 from Lime Cove north to Kline Hole

Date	Number of Cows Seen	Area
3/23/2007	9	Cattle Cove
3/29/2007	7	North of Lime Cove
4/3/2007	7 (including 2 calves)	Lime Cove
5/31/2007	5 (including 1 calf)	Cattle Cove

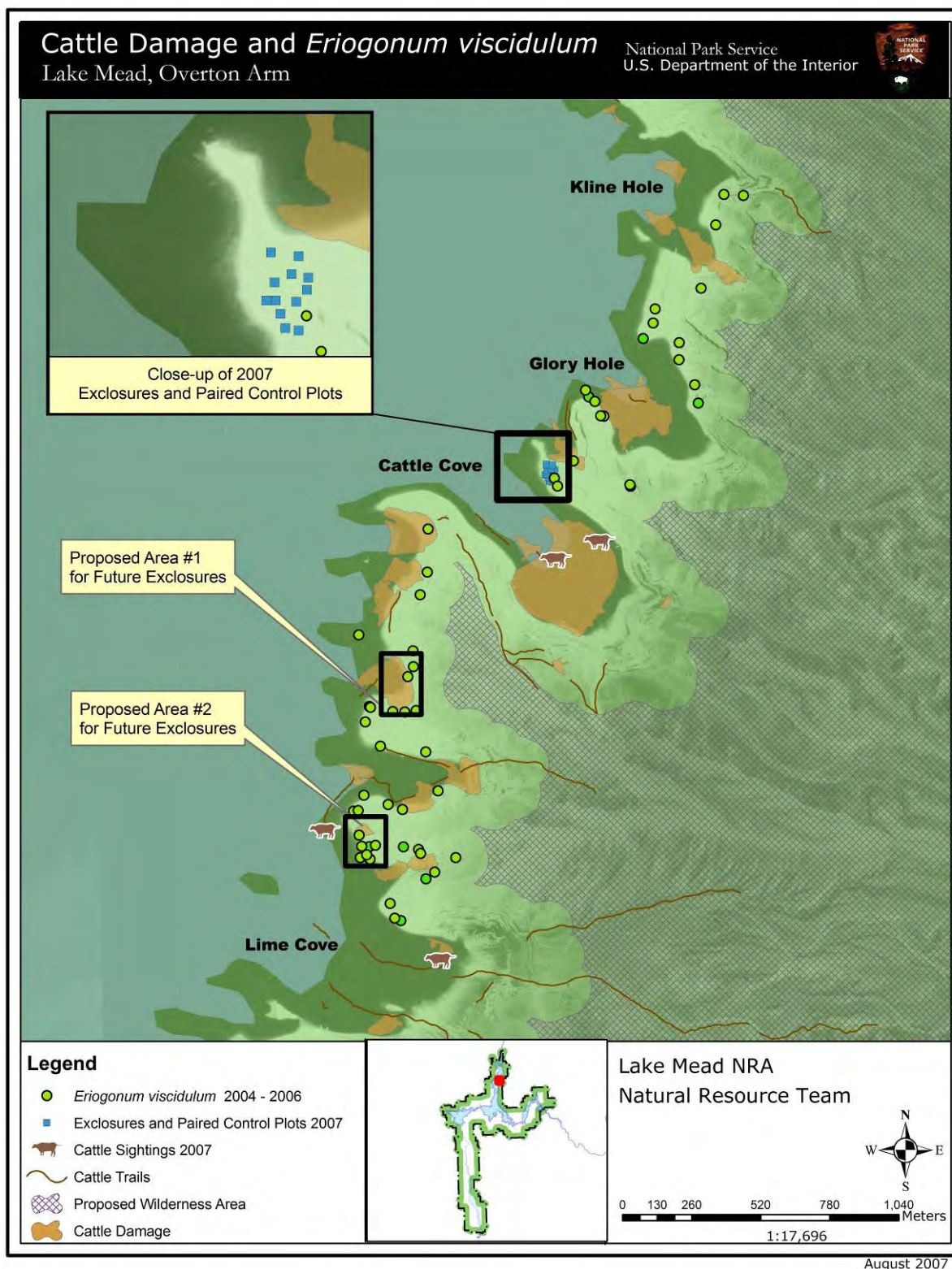


Figure 1. Map showing *E. viscidulum* past sub-population locations, cattle sightings, and documented cattle damage in the immediate area, 2007 exclosure and paired control plot locations, and proposed future areas to place five-by-five meter exclosures



Figure 2. Example of an exclosure, showing t-posts and wire, at Cattle Cove

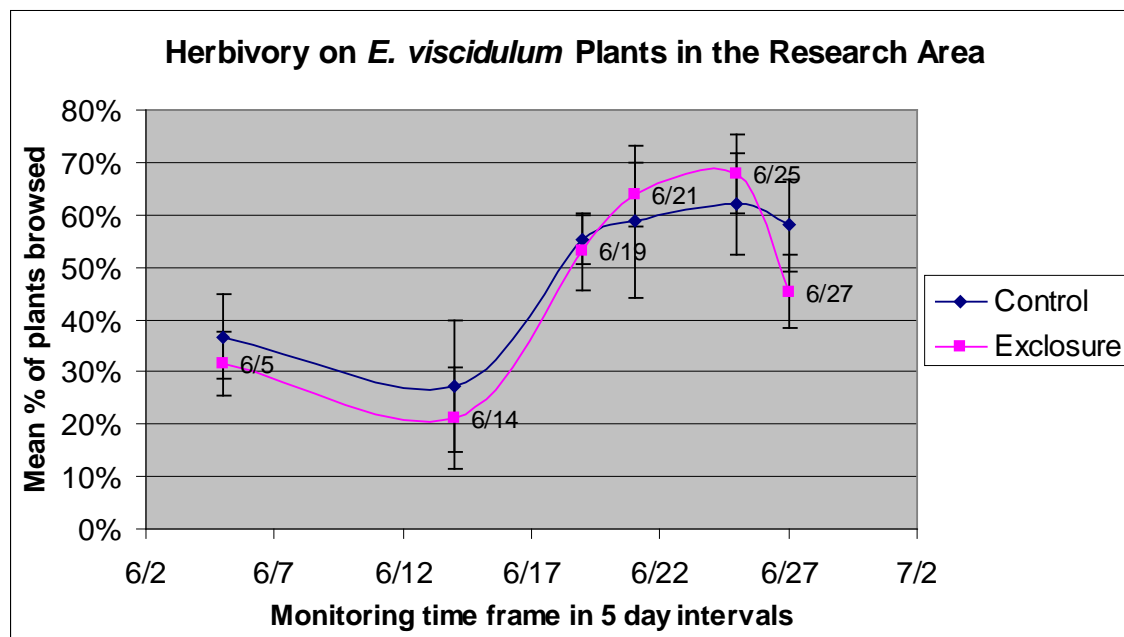


Figure 3. Mean percentages of documented herbivory in exclosure and paired control plots from June 5 to June 27, 2007



Figure 4. Cattle near the *E. viscidulum* research project area at Cattle Cove on March 29, 2007



Figure 5. Cattle retreating from *T. ramosissima* trees at Cattle Cove on May 31, 2007



Figure 6. Cattle north of Kline Hole across from Overton Beach



Figure 7. Photo taken on April 5, 2007 of flowering *E. viscidulum* plants in the project area

Acknowledgements

The authors would like to thank E. Cayenne Engel for her consultation and help with the statistical tests, analyses, and monitoring; Dianne Bangle for her consultation on *E. viscidulum* populations; Dr. Scott Abella for suggestions on the monitoring design; Chris Raynolds for technical and operational support; Jim Riley, National Park Service Volunteer, for early morning boat rides to the project area and cool drinks every afternoon; Robert Abella, Dr. Scott Abella, E. Cayenne Engel, Colin Fisher, Alice Newton and Michelle Zuro-Kreimer for assisting in the installation of the exclosures and paired control plots; Josh Hoines, Corey Kallstrom and Alice Newton for editing assistance.

Literature Cited

- Bangle, D. 2007. Monitoring methods and protocols for *Eriogonum viscidulum* (sticky buckwheat) within Lake Mead NRA. Unpublished report for Lake Mead National Recreation Area. Boulder City, NV.
- Howell, J.T. 1942. *Eriogonum viscidulum* J.T. Howell. Leaflets of Western Botany, 3:138.

ATTACHMENT D TO DECLARATION BY ALICE C. NEWTON

United States v. Bundy, No. 2:12-cv-804-LDG-GWF

**Lake Mead National Recreation Area
Cattle Damage Documentation at Fisherman's Cove Road**

Heavy cattle damage and a dead calf were found on September 12, 2007 at Fisherman's Cove (AR113) inside the Lake Mead NRA boundary by several Natural Resource Management (NRM) employees. NRM employees checked on the site after receiving word from a BLM employee that hay had been dumped at the end of Fisherman's Cove road. There was a very heavy damage area surrounding approximately 75 square feet of flattened hay on the ground. The heavy cattle damage was evidenced by dung, tracks and compaction, with hay spread throughout the area. A dead calf was found inside the heaviest cattle damage area. This site was last visited by the same NRM employees in May and there was no evidence of heavy cattle damage or hay at that time, although cattle had been previously documented in the area. Vehicle tracks leading to the area from the road could be seen in the gravel. This event could have future impacts on the resources in the area by encouraging cattle to return to the site and cause further damage. Also, if the hay was not certified as weed-free, weed seeds are likely being spread in the area and the park.



Figure 1. Vehicle tracks leading off-road to the hay and cattle damage area



Figure 2. Dead calf, flattened hay, cattle feces and tracks



Figure 3. Heaviest cattle damage area surrounding the flattened hay with a NRM truck for scale



Figure 4. Dead calf on top of hay and feces



Figure 5. Dead calf with cattle damage in the background, showing denuded vegetation, hay and feces

ATTACHMENT E TO DECLARATION BY ALICE C. NEWTON

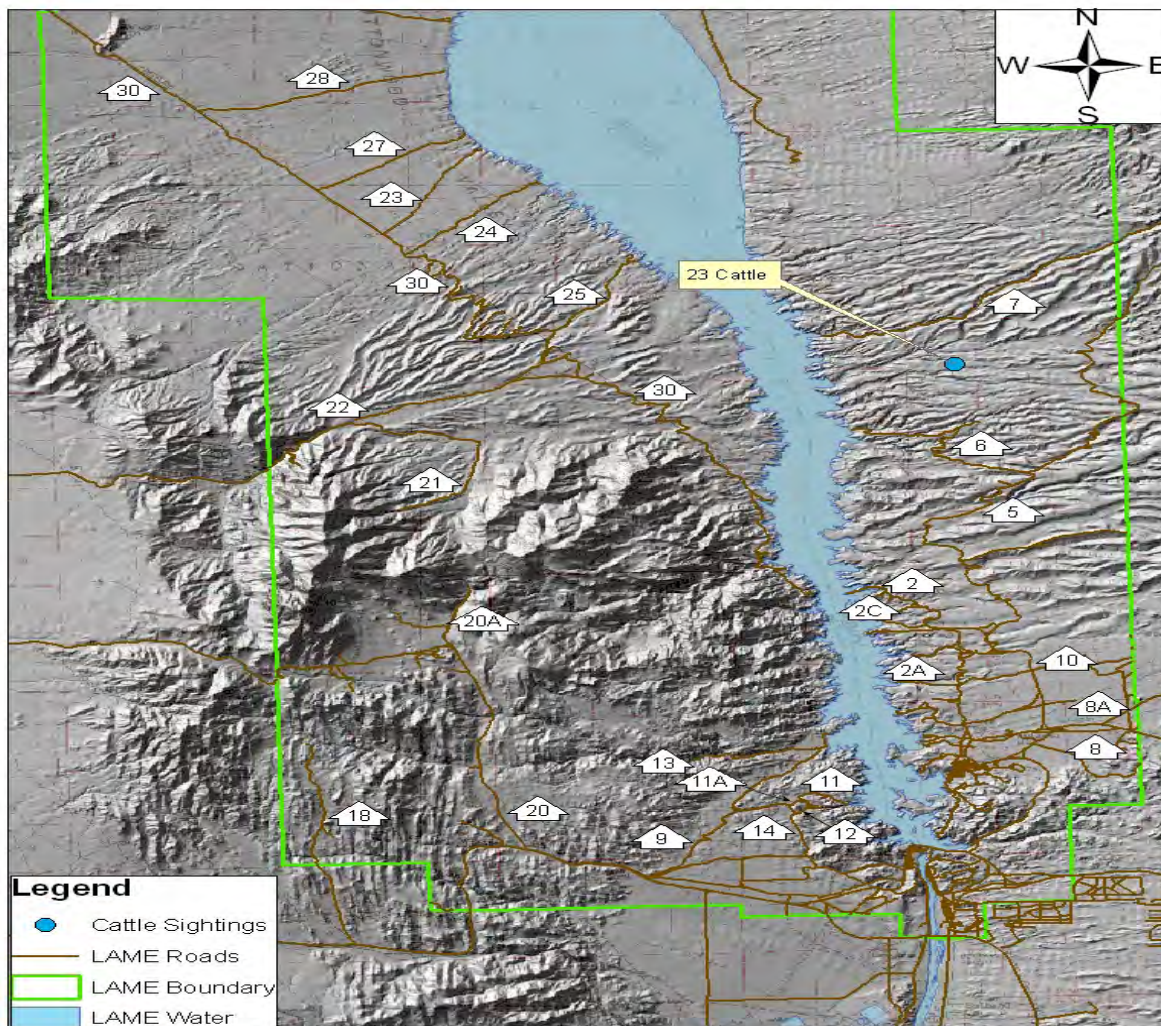
United States v. Bundy, No. 2:12-cv-804-LDG-GWF

Aerial Cattle Sightings:

02/11/09- Area was surveyed via fixed wing aircraft from Katherine's landing to Fire Mountain and from the border with BLM to the edge of Lake Mojave. The BLM open allotment that borders the area is Ft. McEwen Unit A.

Cattle were sighted well within LAME boundary nearby Portland Mine Road where original ground sighting was made. Cattle were Hereford, Angus, Brangus and Charolaise breeds with no discernable markings or tags. The one herd was observed loosely associated into four groups in and around Granite Wash. One group of 14 and one nearby group of 9 were observed. Many livestock trails (burro+cattle) were observed from the air going to and from lake edge.

Lat Long coordinates: N35°20.75' W114°33.56'

Map of general Portland Mine Road area with point for general herd sighting:

02/12/09- Area was surveyed via fixed wing aircraft from Mt Wilson across Detrital Wash to Temple Bar and from LAME boundary with BLM to Lake Mead edge at Bonelli Bay. The BLM open allotment that borders this area is Big Ranch Unit A and B.

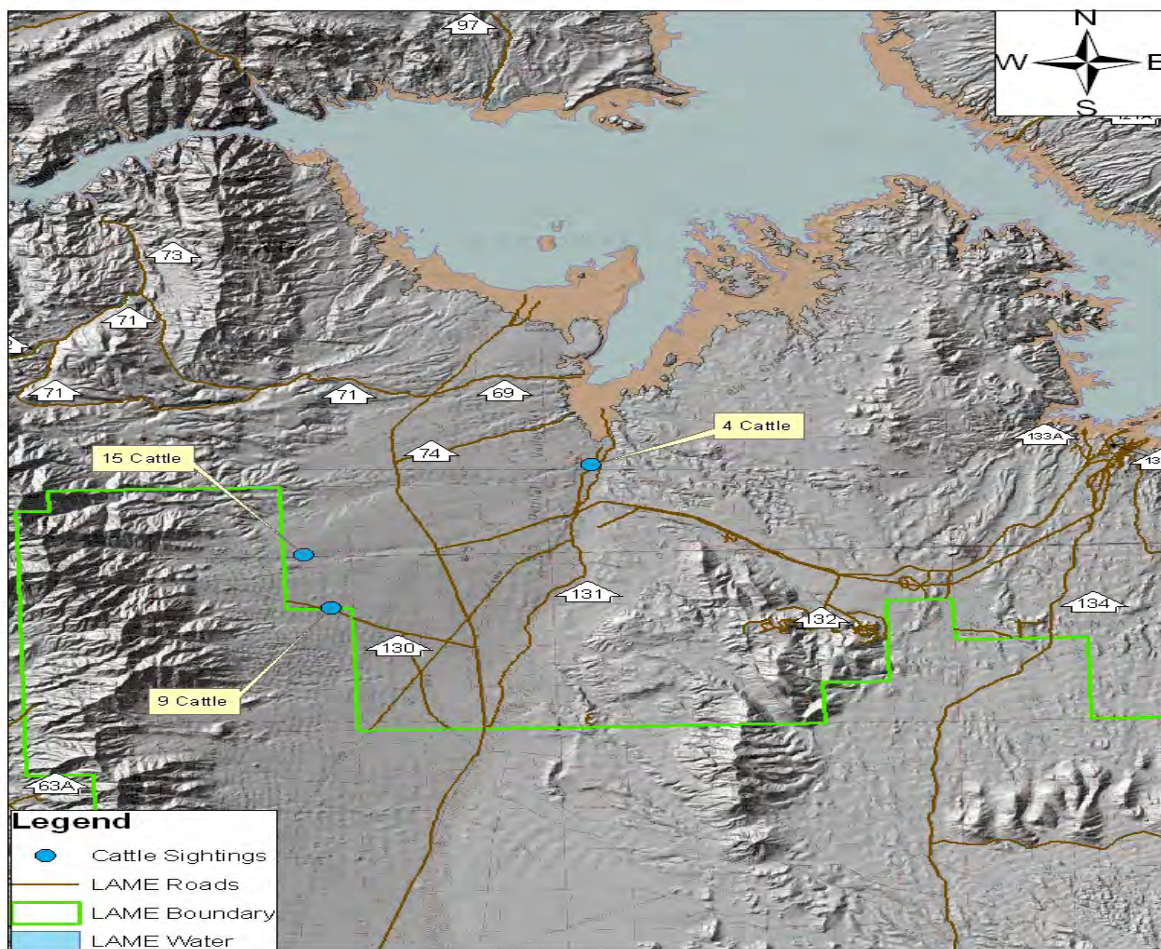
Cattle were sighted within LAME boundary near BLM border as well as far inside Lame boundary. Cattle were Hereford, Angus, Brangus and Charolaise breeds with no discernable markings or tags. There were two main herds both located in the area between Petroglyph Wash Road South to approved backcountry road AR130 near the LAME boundary. One herd of 15 including a brand new calf and one herd of 9 were observed. Another small group of four cattle were observed in Detrital Wash near the Temple Bar Road crossing. Many livestock trails (burro+cattle) were observed from the air going to and from Mt Wilson highland areas into Detrital Wash and towards the Lake edge.

Lat Long coordinates: N35°58.90' W114°32.23' - 9 head near rd AR130

N36°00.05' W114°32.64' -15 head in large wash South of Petroglyph Wash

N36°01.88' W114°27.98' -4 head in Detrital Wash N of Temple Bar road

Map of general Detrital Wash area with points for cattle sightings:

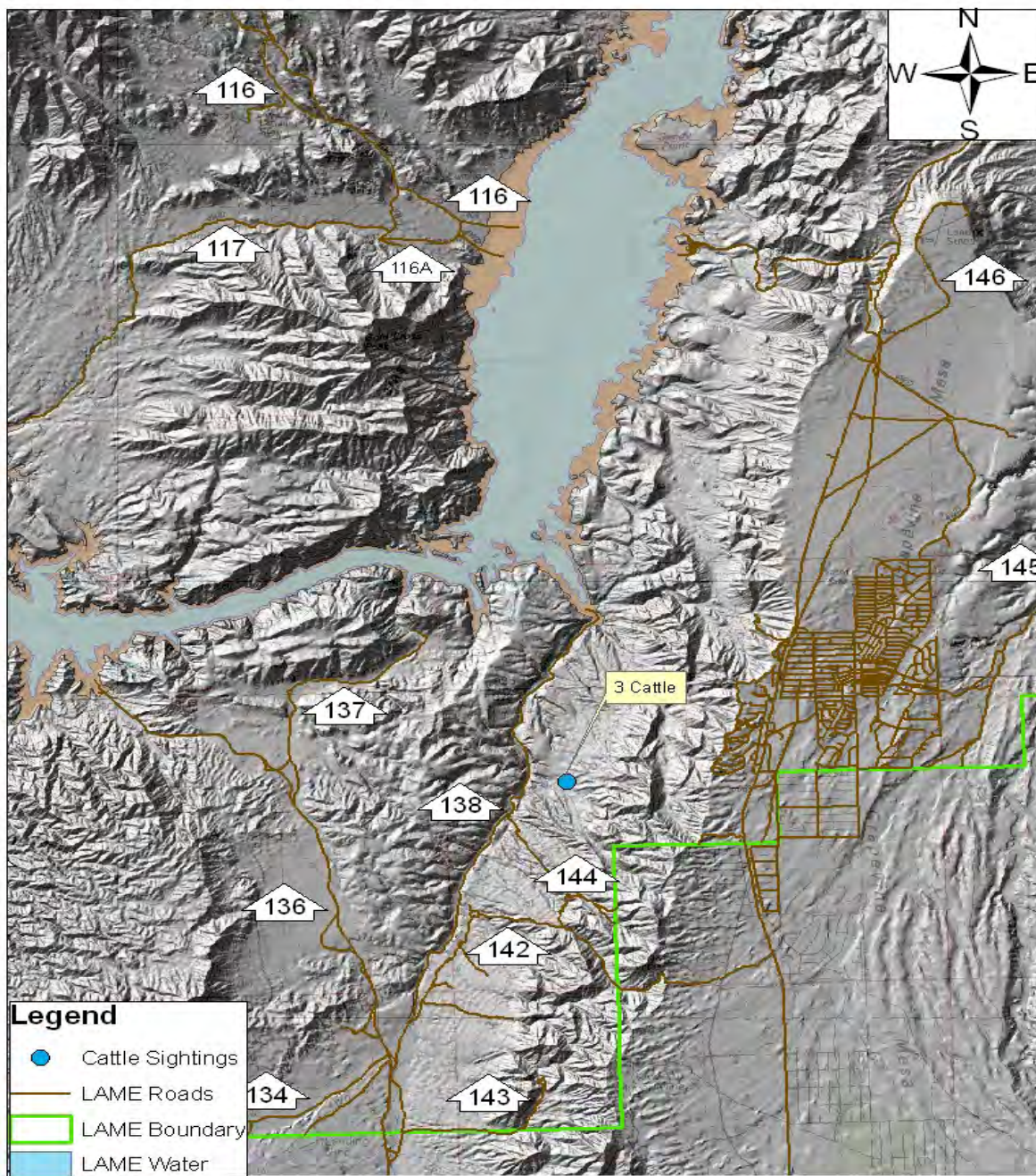


02/13/09- Area was surveyed via fixed wing aircraft from Temple Bar to Diamond Bar including Hualapai wash and Grapevine wash. The BLM open allotment closest was Diamond Bar.

Cattle were sighted well within LAME boundary up a side wash from Hualapai wash. Three head of Hereford breed cattle were observed directly North of the road to South cove.

Lat Long coordinates: N35°58.83' W114°07.87'

Map of general Hualapai wash area with a point indicating cattle sighting:



02/17/09- Area was surveyed via fixed wing aircraft from Catclaw wash along the Eastern shoreline below Gold Butte to the Northern-most Park boundary of the Virgin River. Also from the Northern-most Park boundary in the Muddy River across St Thomas down the Western shoreline past Overton Beach to Stewart's point. There are no open BLM allotments adjacent to this area. Cattle trailing, terracing and general damage is visible and extensive from aerial view!!!

Overton Beach herd: Cattle were sighted well within Park boundary near Overton Beach housing where contemporary ground sightings purported. Three head were observed at newly erected, open, cattle enclosures just North of Overton Beach Housing. 12 head were observed on Anne Margerett beach which is South of Overton Beach Housing along Overton Beach road spur and nearing Stewart's point. 15 head were observed all together. All cattle were mixed breed white face.

One large solitary (dangerous) Brendal Brahma bull was observed near road 110 on LAME boundary near St. Thomas.

Lat Long coordinates: N36°29.10' W114°24.24' –solitary Brahma bull

Coordinates not available but point plotted on map! -12 cows on Anne Margerett Beach plus 3 cows in enclosure at OB.

Virgin River basin to current lake edge herds: 2 large herds were observed well within LAME boundary. Numbers were large as expected from on the ground visible damage observations. One herd of 17 head were observed just North of the Virgin River bowl in uplands bordering West side of river. 20 head were observed within draw down zone near Fish Island (no longer island). Both herds were black and brown Hereford mix breed white faces. New calves observed with each herd.

Lat Long coordinates: N36°31.88 W114°20.81' -17 head Virgin Bowl

Coordinates not available but point plotted on map! -20 head near Fish Island

West side of Gold Butte cattle: Largest density of cattle in Park found here. 18 head observed in Northern-most herd well within Park boundary and North of Glory Hole near Overton Beach East. 2 cows were observed at Glory Hole beach. 6 head of cattle were observed just inland from Lime Cove. 8 head were observed in Catclaw Wash near the lake's edge.

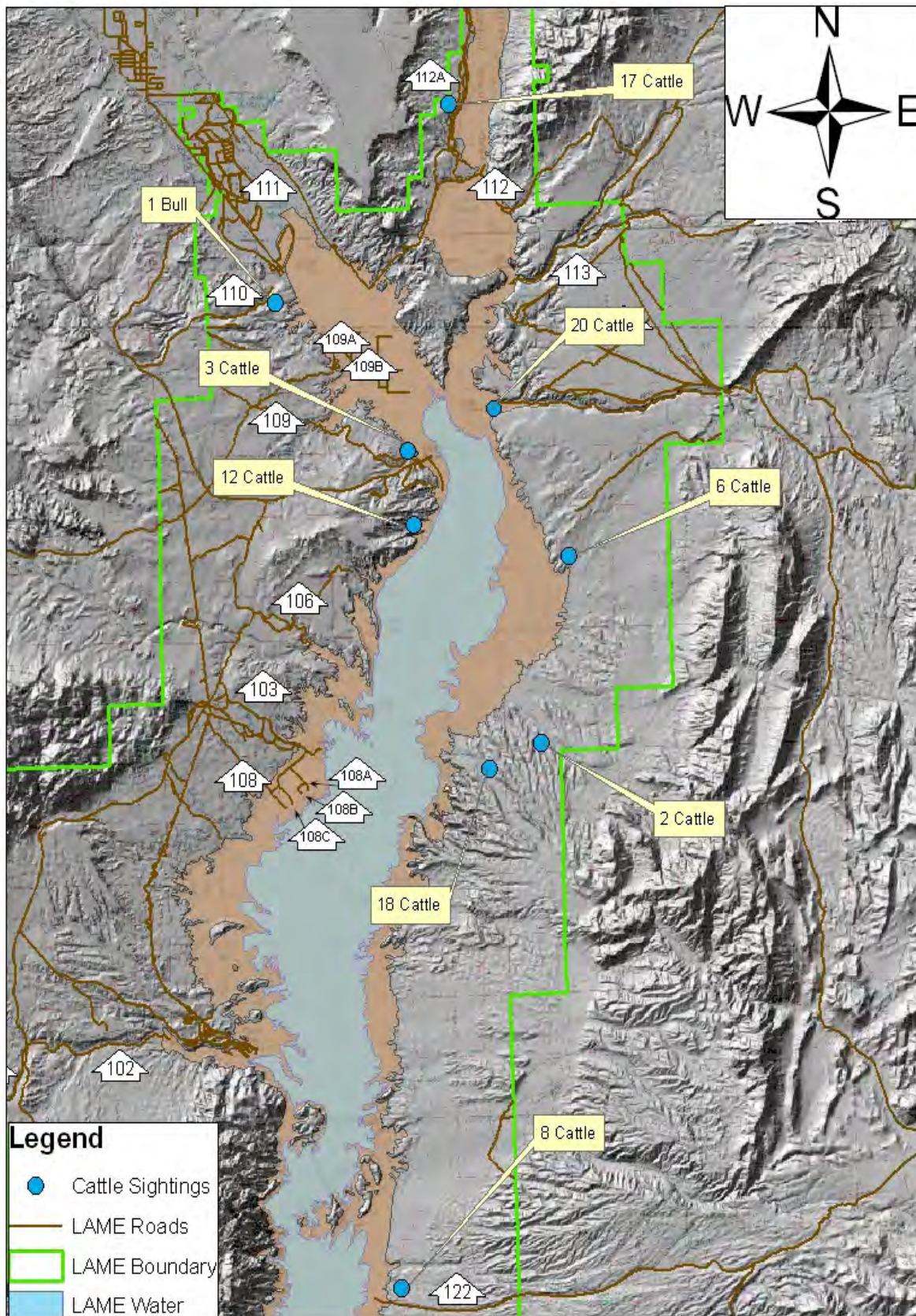
Lat Long coordinates: N36°22.31' W114°20.34' -18 head in N.

N36°22.66' W114°19.35' -2 head Glory Hole

N36°25.33' W114°18.73' -6 head Lime Cove

N36°14.88' W114°22.28' -8 head Catclaw Wash

Map of general Overton Arm area with points indicating cattle sightings:



ATTACHMENT F TO DECLARATION BY ALICE C. NEWTON

United States v. Bundy, No. 2:12-cv-804-LDG-GWF

Aerial Cattle Surveys

Bruce Lenon, pilot; Alice Newton, recorder/observer; Chris Roberts, observer; Toshi Yoshida, observer.

2/11/09 – Surveyed east side of Lake Mojave from Cottonwood East to Katherine, from lake to boundary.

2/12/09 – Surveyed Detrital valley area from lake to south boundary.

2/13/09 – Surveyed Hualapai Wash from lake to boundary, Grapevine Mesa north of Meadview, and Grapevine Canyon.

2/17/09 – Surveyed upper Overton Arm, Virgin and Muddy Rivers, from north boundary to Twin Springs Cove on east side, and to Stewarts Point on west side.

If lat/long coordinates conflict with comments, go with lat/long.

Date	Number	Location lat/long	Description	Comments
2/11/09	~ 25	N 35d 20.75m W 114d 33.56m		Portland Mine Road area
2/12/09	~ 9	N 35d 58.90m W 114d 32.23m		Detrital Valley
2/12/09	~ 15	N 36d 00.05m W 114d 32.64m	Hereford and Brangus(?), Calves present	Detrital Valley
2/12/09	4	N 36d 01.88m W 114d 27.98m	2 blacks, 2 browns	Detrital Valley
2/13/09	~3	N 35d 58.83m W 114d 07.87m	Herefords	Hualapai Wash - Check the malcomia in corral near intersection AR136 and AR134 Yes, we went flying on Friday the 13th
2/17/09	~17	N 36d 31.88m W 114d 20.81m	Blacks and browns	Virgin River above the bowl
2/17/09	~12		Blacks and browns	Ann Margaret Beach
2/17/09	3			In the pen at Overton Beach Marina
2/17/09	1	N 36d 29.10m W 114d 24.24m	Brindle	Bull? Very large animal, west side of the Arm
2/17/09	~20		Calves, white, browns, blacks, some white faces	East of Fish Island moving south along shoreline
2/17/09	6	N 36d 25.33m W 114d 18.73m		East side of the Arm
2/17/09	2	N 36d 22.66m W 114d 19.35m	browns	East side of the Arm

2/17/09	~18	N 36d 22.31m W 114d 20.34m		East side of the Arm
2/17/09	~8	N 36d 14.88m W 114d 22.28m		Catclaw Wash
2/17/09	1		burro	Weasel Hole, north of Catclaw Wash
2/17/09	3			Maint. reported walking along OB access road, could be same ones in pen

ATTACHMENT G TO DECLARATION BY ALICE C. NEWTON

United States v. Bundy, No. 2:12-cv-804-LDG-GWF

United States Department of the Interior



NATIONAL PARK SERVICE

LAKE MEAD NATIONAL RECREATION AREA
601 NEVADA HIGHWAY
BOULDER CITY, NEVADA 89005

IN REPLY REFER TO:

H4217 (LAME-RM)

October 20, 2010

Mr. Ron James
State Historic Preservation Office
100 North Stewart St.
Capitol Complex
Carson City, Nevada 89701-4285

Dear Mr. James,

Lake Mead National Recreation Area (LAKE) proposes to construct a fence around the Main Ridge area of Pueblo Grande de Nevada, 26CK2148, to prevent cattle from damaging the features at the site and causing further erosion. Pueblo Grande de Nevada was listed in the National Register of Historic Places in 1982.

An Assessment of Actions Having an Effect on Cultural Resources form for the Main Ridge Cattle Fencing Project has been completed (LAKE CRP # 10-037). The project has been reviewed for conformity with requirements of Section 106 of the National Historic Preservation Act, the 1995 Service-wide Programmatic Agreement, the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, NPS Management Policies, and the NPS Cultural Resources Management Guideline (NPS-28) by the National Park Service (NPS). The NPS has found that the undertaking will cause an effect but that it will not be adverse.

The project area has been inventoried for cultural resources. The fence line would be located in the washes on either side of the ridge. The archaeological features are located on the ridge and none are located in the washes where the fence would be located.

The NPS recommends that the project will have no adverse effect on cultural resources provided the following recommendations are followed:


1. If concealed archaeological resources are encountered during project activities, all necessary steps will be taken to protect them and to notify the park archaeologist and/or cultural resource specialist immediately;
2. An archaeologist will be present during all on-site pre-construction work and during the fence construction;
3. Should archaeological remains be found where the fence is to be constructed, that portion of the fence line will be realigned to avoid the cultural resources.

4. The condition of the archaeological site will be re-assessed after the completion of the fence installation.

The NPS asks that you review the enclosed documentation and concur that the Main Ridge Cattle Fencing Project will have no adverse effect on cultural resources.

If you have any questions, please contact Park Archeologist Steve Daron at (702) 293-8859 or by e-mail at Steve.daron@nps.gov.

Sincerely,


William Dickinson
Superintendent

Enclosures

MODEL FORM FOR ASSESSMENT OF ACTIONS HAVING AN EFFECT ON CULTURAL RESOURCES**A. DESCRIPTION OF UNDERTAKING**

1. **Park:** Lake Mead National Recreation Area (LAKE) Park district (optional) _____
2. **Work/Project Description:**
 - a. Project name Main Ridge Cattle Fencing Project date 10/7/10 park project #(s) LAKE CRP 10-037
 - b. Describe project and area of potential effects (as defined in 36 CFR Part 800.2(c)); explain why work/project is needed.

The Main Ridge Cattle Fencing Project involves completely fencing in the Main Ridge Complex in order to keep feral cattle off the archaeological remains (*Map 1*). This project was initiated because the site was listed on the National Register of Historic Places (NRHP) in 1982 as the type site for the Virgin Anasazi Lost City Phase (Harry 2008: 1). At the time of listing, the site consisted of 46 rock-lined "house" features with associated archaeological remains comprised of ceramics, lithics, groundstone, and botanical remains. The project area is situated at the confluence of the Muddy and Virgin Rivers within the Main Ridge (26CK2148) complex (also known as Pueblo Grande de Nevada or Lost City). The site is located in Clark County, Nevada just 4.5 miles southeast from the city of Overton off of an abandoned portion of the Muddy River Access Road (Approved Road 111).

Recent activity of feral cattle in the area has increased the rate of erosion of features, artifacts, and topography as they are trampled. In order to protect the archaeological remains at Main Ridge, it is proposed that a three strand cattle exclusion fence be constructed around the site to prevent further trampling (*Map 2*). The LAKE Fencing and Grazing Program Manager (Chris Roberts) is proposing the construction of a 12 gauge wire fence with "H" braces on the corners to keep cattle off of the resources. The "H" brace corners will need to be set into the ground with cement, and the other posts will be placed every 15 feet using a post pounder. If solid rock is encountered during the fence installation, a pionjar (gas powered drill) will be used to dig the post holes. No motorized vehicles will be used to transport materials to the site, and instead will be carried in by hand via the abandoned portion of AR 111. The proposed fence would completely encompass Main Ridge, with fence lines on the east and west sides, terminating at the steep slopes of a ridge near the northern site boundary (*Figure 1*). The fence will begin at the steep slope on the northeast side of Main Ridge, continue through the eastern drainage, and follow the abandoned portion of AR 111 to the southern tip of Main Ridge (*Figure 2-7*). From the southern tip, the proposed fence will run parallel to Main Ridge for approximately 0.9km until it reaches a large drainage on the west side (*Figure 8-9*). The fence will then wind through the western drainage and terminate at a steep slope, thus preventing cattle from accessing Main Ridge from the lower elevations (*Figure 10-11*).

Archaeological field work at Main Ridge has been conducted during three separate time periods, first by Mark Raymond Harrington from 1924-1926, by Dr. Margaret Lyneis from 1977-1987, and by Dr. Karen Harry from 2005-2008 (*Table 1*). Previous research in the area was started by Mark Raymond Harrington from 1924-1926 under the Heye Foundation's Museum of the North American Indian (Harry 2008: 1). Most of the features on Main Ridge were excavated during this time and later work was completed by the Southwest Museum and the National Park Service. After the completion of the Hoover Dam (previously known as Boulder Dam), the waters of Lake Mead rose and partially inundated the site. In 1977, Dr. Margaret Lyneis of the University of Nevada, Las Vegas (UNLV) began visiting the site and recognized the need for surface collections and feature mapping (Harry 2008: 1). Field sessions were later conducted by Lyneis in 1980 and 1987, providing a baseline of data for future researchers (Harry 2008: 2).

Table 1. Previous Archaeological Field Work Conducted at the Main Ridge Complex, 26CK2148.

Project Dates	Purpose	Results
Harrington 1924-1926	<ul style="list-style-type: none"> To excavate the site before the inundation by Lake Mead 	<ul style="list-style-type: none"> Excavation of most "house" features at Main Ridge
Southwest Museum and National Park Service (LAKE) Post 1926	<ul style="list-style-type: none"> Further study of Main Ridge before the inundation by Lake 	<ul style="list-style-type: none"> Not provided

	Mead	
Lyneis 1977-1987	<ul style="list-style-type: none"> To map features and to recover surface artifacts before further erosion of the ridge 	<ul style="list-style-type: none"> Surface collection Feature mapping
Harry 2005-2008	<ul style="list-style-type: none"> To determine the site condition after Lake Mead's waters had receded To analyze the research potential of intact archaeological remains 	<ul style="list-style-type: none"> Testing of House 20 Shovel testing Condition Assessments Feature and site mapping

The site remained untouched until 2005 when LAKE contracted the Public Lands Institute (PLI) of UNLV to conduct archaeological fieldwork at Main Ridge. Students from UNLV participated in an archaeological field school that entailed further mapping of the site, pedestrian survey, condition assessments, shovel testing, and testing of House 20 (Harry 2008: 1). Results of the condition assessments revealed unstable ground caused by the previous excavations and inundation of the site. Exposed gullies and underground piping formed by the waters of Lake Mead are beginning to erode, posing a threat to the features on top of Main Ridge (Harry 2008: 112).

Legal Description for the project area: T.17S, R.68E, NE ¼ of Section 13
Overton Beach, NV (1983) 7.5' USGS Quadrangle

National Register boundaries
(NAD 1927, Zone 11): 735400E, 4041000N
734900E, 4041450N
735500E, 4041750N
735750E, 4041600N

3. **Has the area of potential effects been surveyed to identify cultural resources?**

☐ No
☒ Yes Source or Reference CRP 06-043 UNLV Field School Project
☐ Check here if no known cultural resources will be affected. (If this is because area has been disturbed, please explain or attach additional information to show the disturbance was so extensive as to preclude intact cultural deposits.)

Harry, Karen G.

2008 *Main Ridge 2006 Research Project: Condition Assessments, Test Excavations, and Data Analyses for the UNLV Fall 2006 Field School*. Department of Anthropology & Ethnic Studies and the Public Lands Institute University of Nevada Las Vegas, Great Basin Cooperative Ecosystems Studies Unit (Agreement No. H8R070600 Task Agreement J8R07050006). Copy on file at Lake Mead National Recreation Area, Boulder City, Nevada.

Lyneis, Margaret M.

1980 *Archeological Data Recovery at Main Ridge, Pueblo Grande de Nevada*. Report on file, Department of Anthropology, University of Nevada, Las Vegas.

4. **Potentially Affected Resource(s):**

Name and number(s): Main Ridge 26CK2148 location: Clark County, NV NR status: Listed 10/08/82
Name and number(s): _____ location: _____ NR status: _____
(REPEAT FOR EACH AFFECTED RESOURCE)

5. **The proposed action will:** (Check as many as apply.)

- ☐ Destroy, remove, or alter features/elements from a historic structure
☐ Replace historic features/elements in kind
☐ Add nonhistoric features/elements to a historic structure
☐ Alter or remove features/elements of a historic setting or environment (inc. terrain)
☒ Add nonhistoric features/elements (inc. visual, audible, or atmospheric) to a historic setting or cultural landscape
☐ Disturb, destroy, or make archeological resources inaccessible,

- ☐ Disturb, destroy, or make ethnographic resources inaccessible
☒ Potentially affect presently unidentified cultural resources
☐ Begin or contribute to deterioration of historic features, terrain, setting, landscape elements, or archeological or ethnographic resources
☐ Involve a real property transaction (exchange, sale, or lease of land or structures)
☐ Other (please specify)

6. **Measures to prevent or minimize loss or impairment of historic/prehistoric properties (Remember that setting, location, and use may be relevant):**

On August 30th of 2010, Archeological Technician Erin Eichenberg (LAKE) and Fencing and Grazing Program Manager Chris Roberts (LAKE) walked the boundary of where the proposed fence would be constructed. No cultural resources were observed near the proposed fence. The fence will be constructed in areas far from known archaeological resources and will entail minimal ground disturbance. The majority of the fence will be situated in drainages and the lowland areas that have been previously inundated. Therefore, it is unlikely that new features or artifacts would be disturbed.

The condition of the archaeological site was assessed prior to project implementation and will be assessed after project implementation. An archaeological monitor will be present for pre-construction preparation work and also during the fence construction itself.

The following recommendations are listed in order to ensure that there will be no adverse affects to the cultural resources during the installation of the fence:

1. If concealed archaeological resources are encountered during project activities, all necessary steps will be taken to protect them and to notify the park archaeologist and/or cultural resource specialist immediately;
2. An archaeologist will be present during all on-site pre-construction work and during the fence construction;
3. Should archaeological remains be found where the fence is to be constructed, that portion of the fence line will be realigned to circumvent the cultural resources.
4. The condition of the archaeological site will be re-assessed after the completion of the fence installation.

7. **Supporting Study Data:** (attach if feasible; if action is in a plan, EA or EIS, give name and project or page number):

8. **Attachments:** [2] Maps [] Archeological survey, if applicable [] Drawings [] Specifications [11] Photographs
 [] Scope of Work [] Site plan [] List of Materials [] Samples
 [] Other _____

Prepared by Erin Eichenberg Date 10/7/10

Title Archeological Technician Telephone (702) 293-8758

B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisers as indicated by check-off boxes or described below:

SPECIALISTS: Your comments here (or attached) show that you have reviewed this proposal for conformity with requirements of Section 106, with the 1995 Servicewide PA (if applicable), and applicable parts of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, NPS Management Policies, and NPS-28, and have given your best professional advice about this project and the issues relevant to the Section 106 process, including identification and evaluation of historic properties and further consultation needs.

[] ARCHEOLOGISTName: Steve SaronDate: 10/18/2010

Comments:

The area has been surveyed and there are no cultural resources in the project area along the fence line.

Check if project does not involve ground disturbance ☐

Assessment of

Effect: ☐ No Effect ☒ No Adverse Effect ☐ Adverse Effect ☐ Programmatic Exclusion

Recommendations for conditions or stipulations:

[] CURATOR

Name:

Date:

Comments

Assessment of Effect: ☐ No Effect ☐ No Adverse Effect ☐ Adverse Effect ☐ Programmatic Exclusion

Recommendations for conditions or stipulations:

[] ETHNOGRAPHER

Name:

Date:

Comments:

Assessment of Effect: ☐ No Effect ☐ No Adverse Effect ☐ Adverse Effect ☐ Programmatic Exclusion

Recommendations for conditions or stipulations:

C. **PARK 106 COORDINATOR REVIEW AND RECOMMENDATIONS** (completed by the park Section 106 coordinator)1. **Assessment of Effect :**

_____ No Effect X _____ No Adverse Effect _____ Adverse Effect

2. **Compliance requirements:** (The following is the park's assessment of Section 106 process needs and requirements for this undertaking.):

[] A. STANDARD 36 CFR PART 800 CONSULTATION
Further consultation under 36 CFR Part 800 is needed.

[] B. PROGRAMMATIC EXCLUSION UNDER THE 1995 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)
The above action meets all conditions for a programmatic exclusion under Stipulation IV of the 1995 Servicewide PA for Section 106 compliance.
APPLICABLE EXCLUSION: Exclusion IV.B _____ [Specify 1-13 or IV.C addition to the list of exclusions.]

[] C. PLAN-RELATED UNDERTAKING
Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 1995 Servicewide PA and 36 CFR Part 800. Specify plan/EA/EIS: _____

[] D. UNDERTAKING RELATED TO ANOTHER AGREEMENT
The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR Part 800.7 or counterpart regulations. Specify: _____

[] E. STIPULATIONS/CONDITIONS
Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.

Recommended by Park Section 106 coordinator:

Name Steve Daron
Title Park Archaeologist
Date 10/18/2010

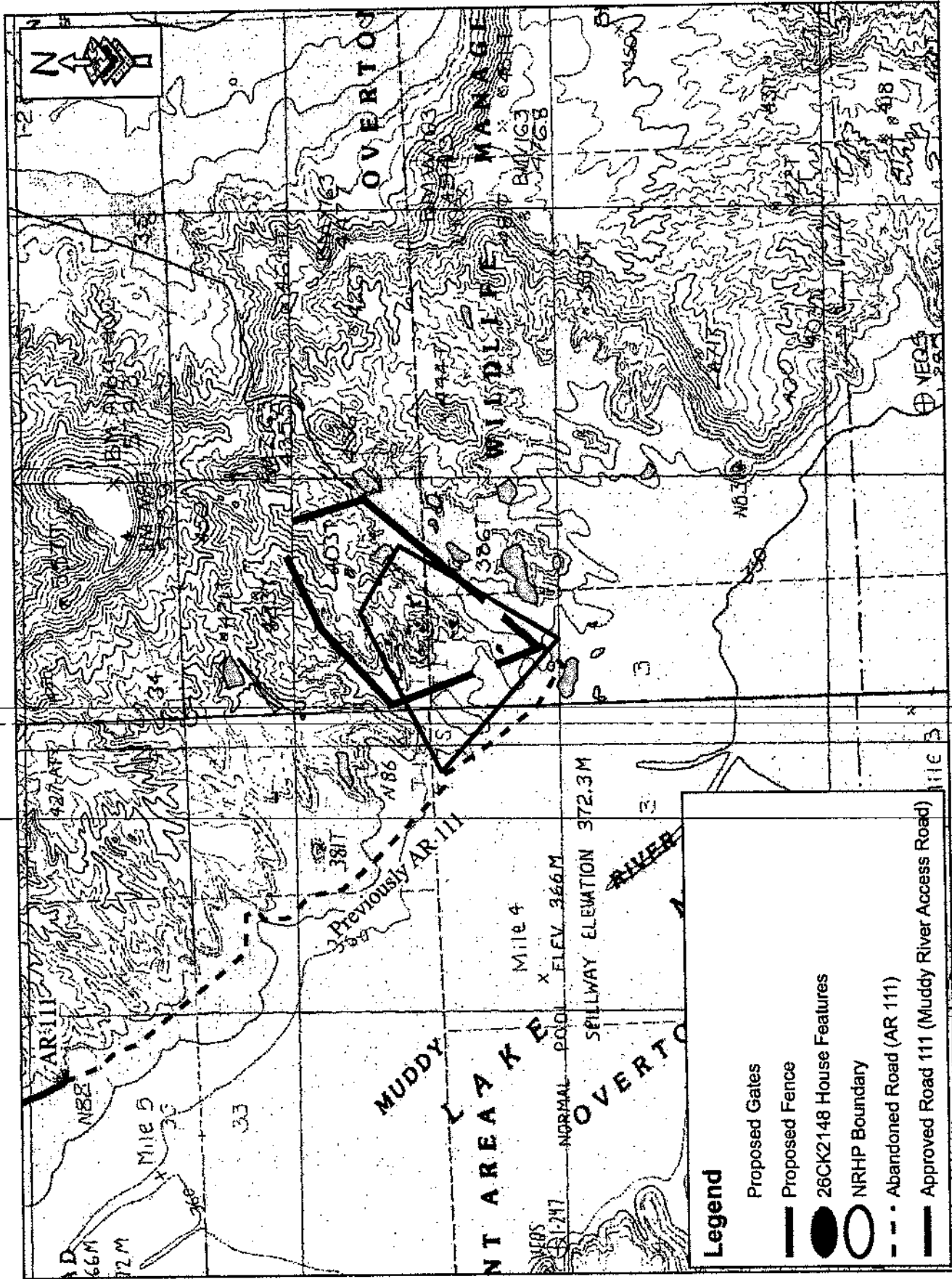
D. **SUPERINTENDENT'S APPROVAL**

The proposed work conforms to NPS Management Policies and NPS-28 and I have reviewed and approve the recommendations, stipulations or conditions noted in Section C of this form.

for Name/Signature of Superintendent Shirley W. Wanshuph
Date 10/25/10

Map 1

CRP 10-037 Proposed Cattle Fence at Main Ridge 26CK2148, Lost City



Overton Beach, NV (1983)
7.5' USGS Quadrangle
Contour Interval 40 ft.

Legend

Proposed Gates

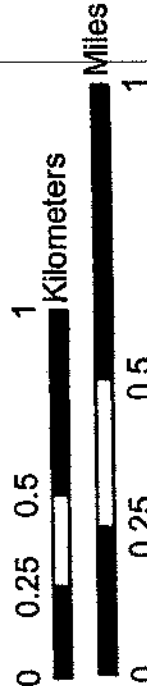
Proposed Fence

26CK2148 House Features

NRHP Boundary

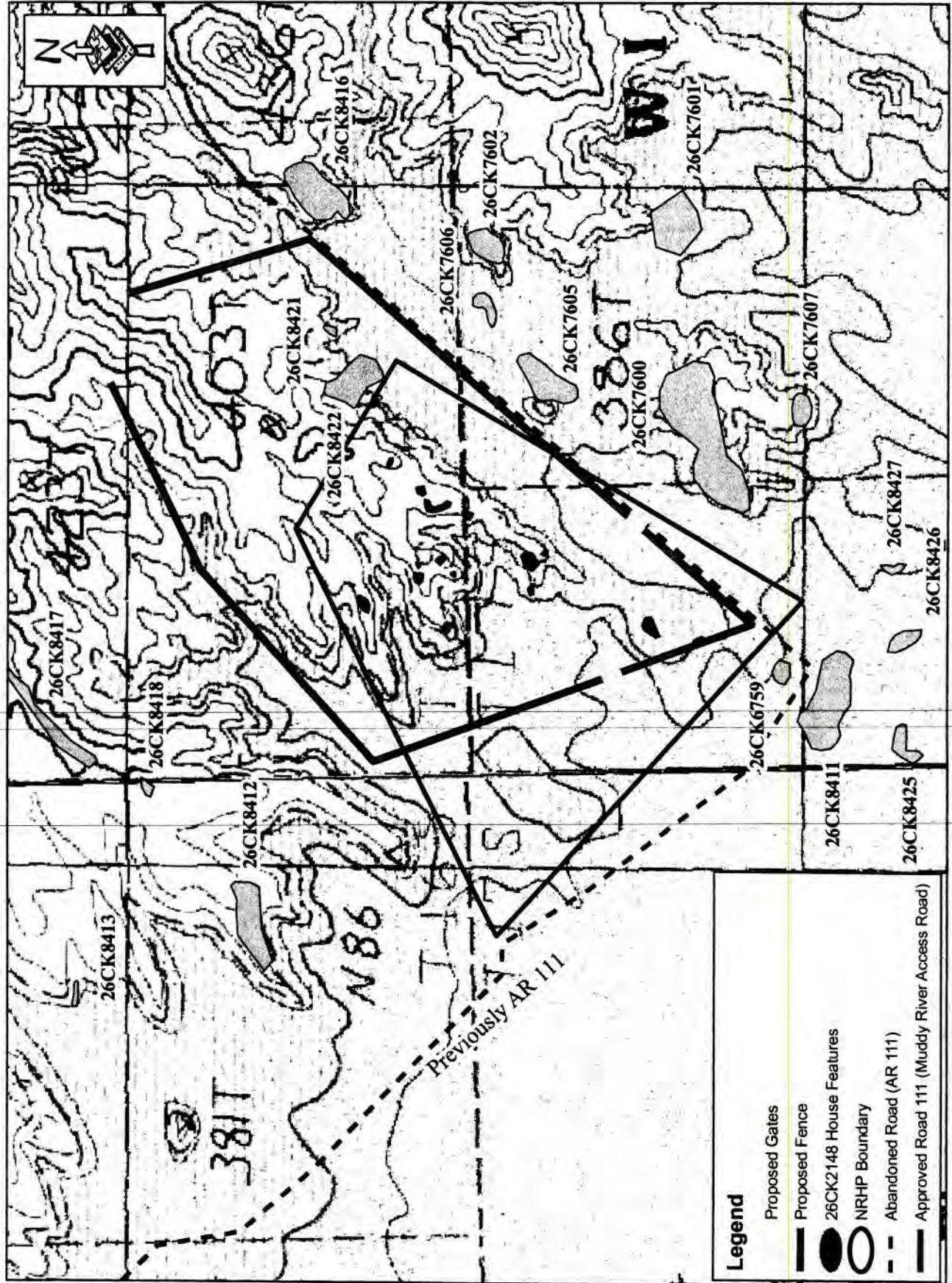
Abandoned Road (AR 111)

Approved Road 111 (Muddy River Access Road)



CRP 10-037 Proposed Cattle Fence at Main Ridge 26CK2148, Lost City

Map 2



Overton Beach, NV (1983)
7.5' USGS Quadrangle
Contour Interval 40 ft.

May 18, 2010/August 30, 2010

26CK2148 Main Ridge Proposed Cattle Fence

CRP 10-037

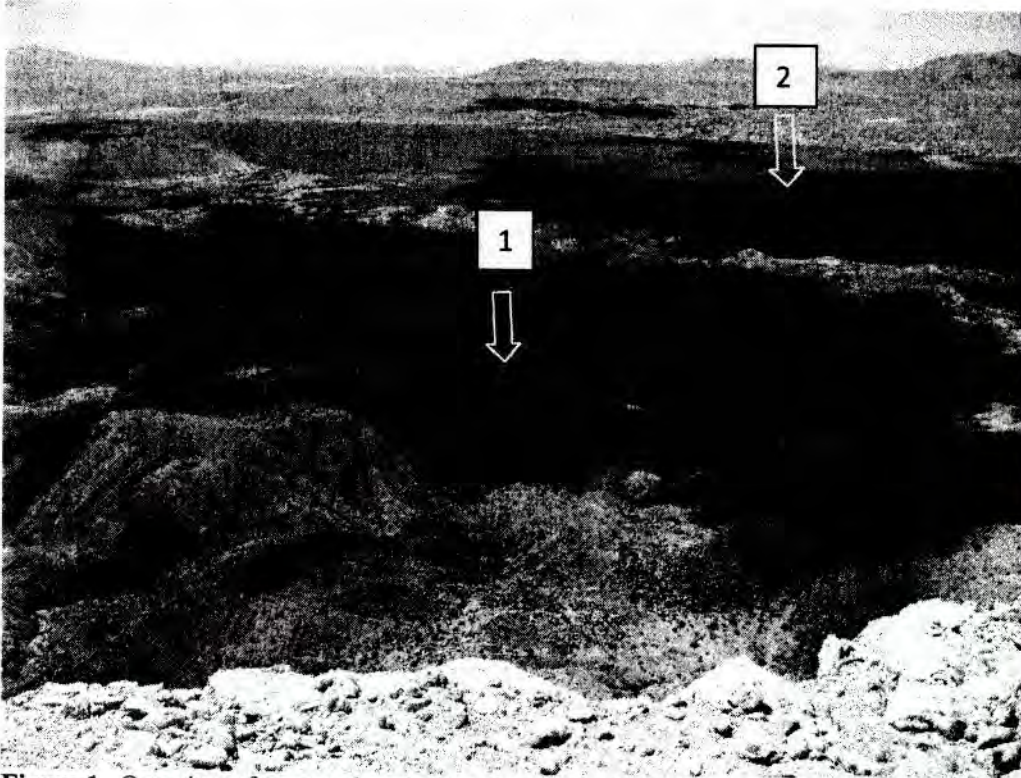


Figure 1. Overview of proposed cattle fence location at Main Ridge (26CK2148). Arrow #1 points to the drainages where the east and west side fence lines meet. Arrow #2 points to the southern tip of Main Ridge. Orientation is southwest and looking down from Mormon Mesa. (D-10-037-004)

May 18, 2010/August 30, 2010

26CK2148 Main Ridge Proposed Cattle Fence

CRP 10-037

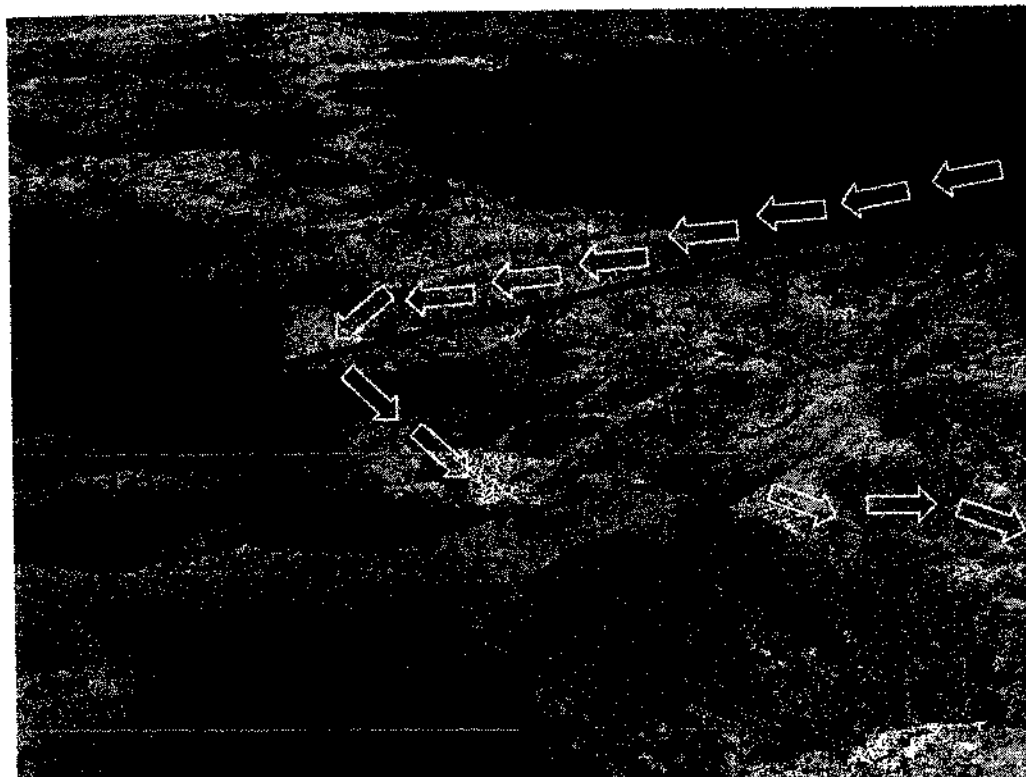


Figure 2. Detail of proposed fence location on the east side of Main Ridge. The arrows denote where the fence will run along the abandoned segment of Approved Road (AR) 111 (black line), continue into the east drainage, and end at the flat area that separates the east and west drainages. Orientation is east. (D-10-037-006)



Figure 3. View of east drainage where proposed fence line will lead to the abandoned segment of AR 111; arrows denote the path of the proposed fence line. Orientation is 344°. (D-10-037-035)



Figure 4. View from the abandoned segment of AR 111 where proposed fence line will lead to the east drainage; arrows denote the path of the proposed fence line. Orientation is 332°. (D-10-037-040)



Figure 5. The proposed fence line will follow the abandoned segment of AR 111 and meet up with the fence line that winds up the east drainage; arrows denote the path of the proposed fence line. Orientation is 32°. (D-10-037-044)

May 18, 2010/August 30, 2010

26CK2148 Main Ridge Proposed Cattle Fence

CRP 10-037

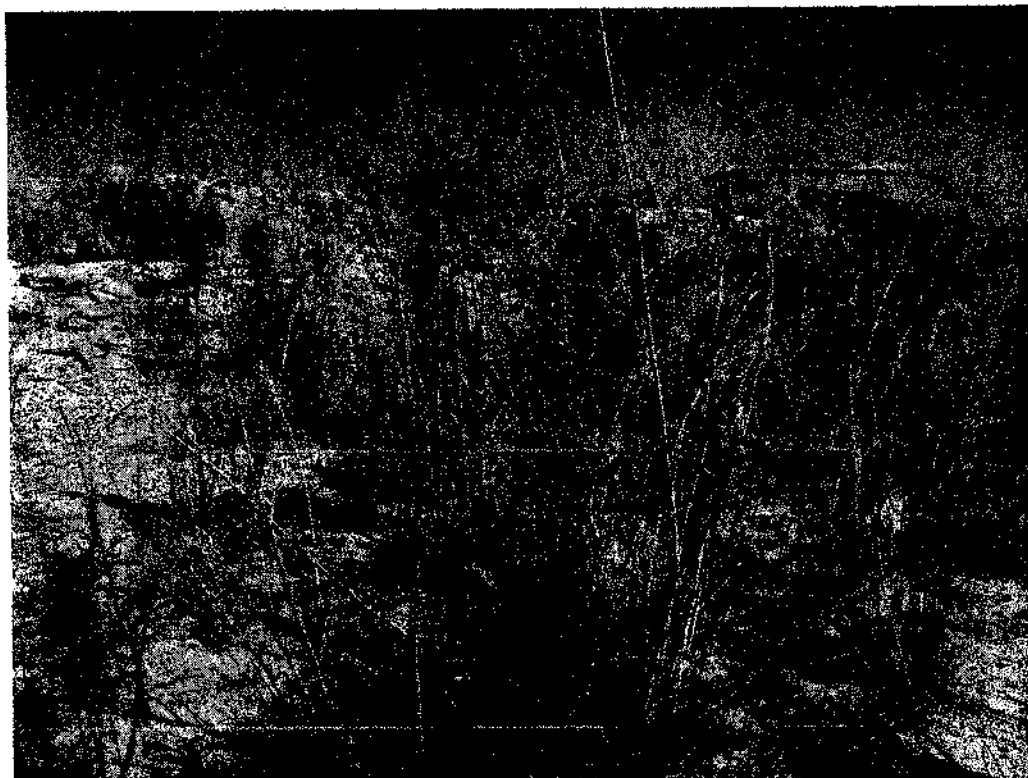


Figure 6. View of the southeastern tip of Main Ridge from the proposed fence line. Orientation is 356°. (D-10-037-047)



Figure 7. View of the southwestern tip of Main Ridge; the fence line will be installed behind the tamarisk at the base of the ridge. Orientation is 48°. (D-10-037-049)

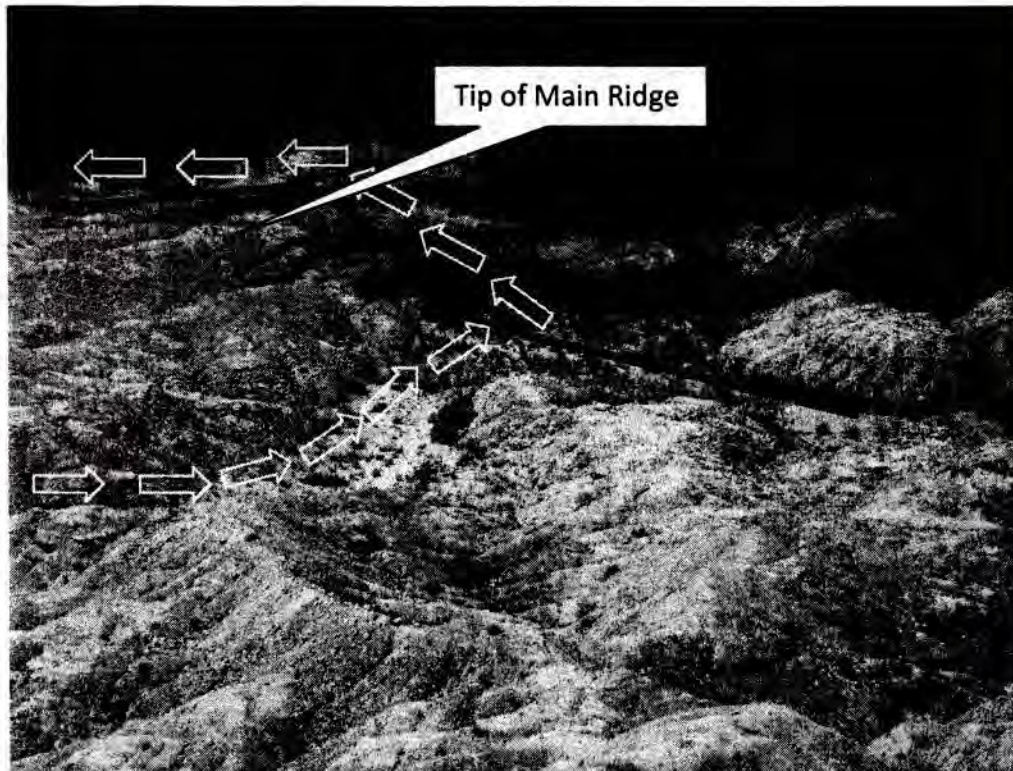


Figure 8. Detail of proposed fence location on the west side of Main Ridge. The arrows denote where the fence will run from the drainage to the abandoned segment of AR 111 (black line) and circumvent the tip of Main Ridge to meet up with the east side of the proposed fence. Orientation is west. (D-10-037-011)



Figure 9. View from the west side of Main Ridge where the proposed fence line will be installed; the southern tip of Main Ridge is on the left. Orientation is 158°. (D-10-037-023)

May 18, 2010/August 30, 2010

26CK2148 Main Ridge Proposed Cattle Fence

CRP 10-037

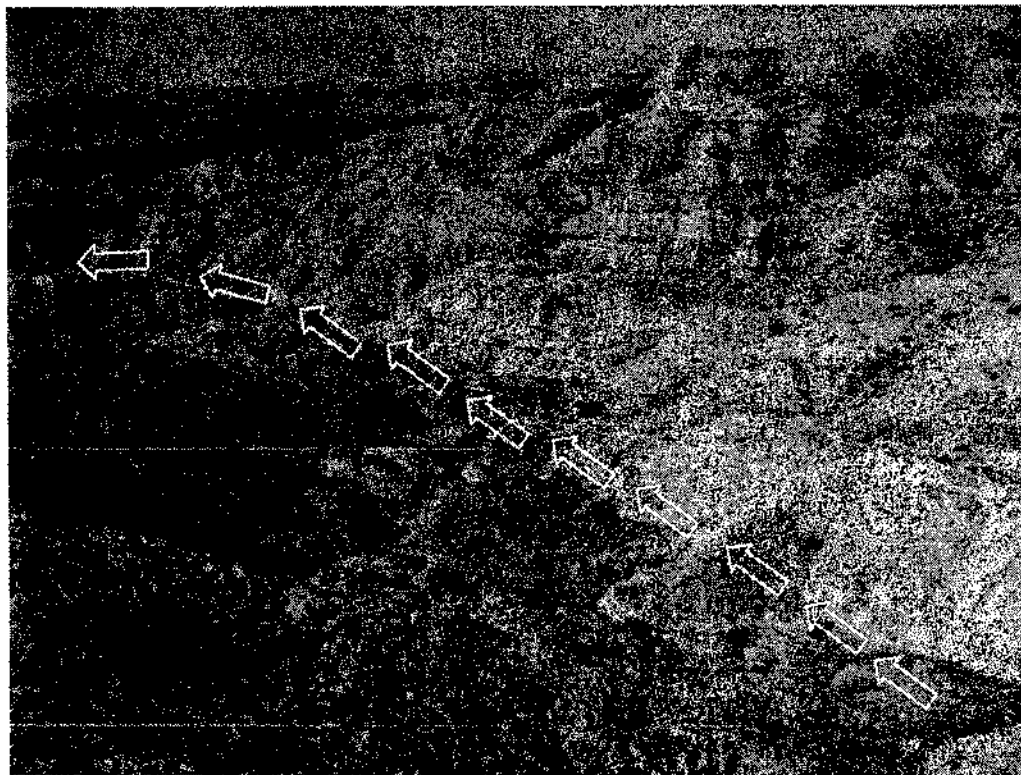


Figure 10. The arrows denote the path of the proposed fence line that will wind through the west drainage. Orientation is 256°. (D-10-037-031)

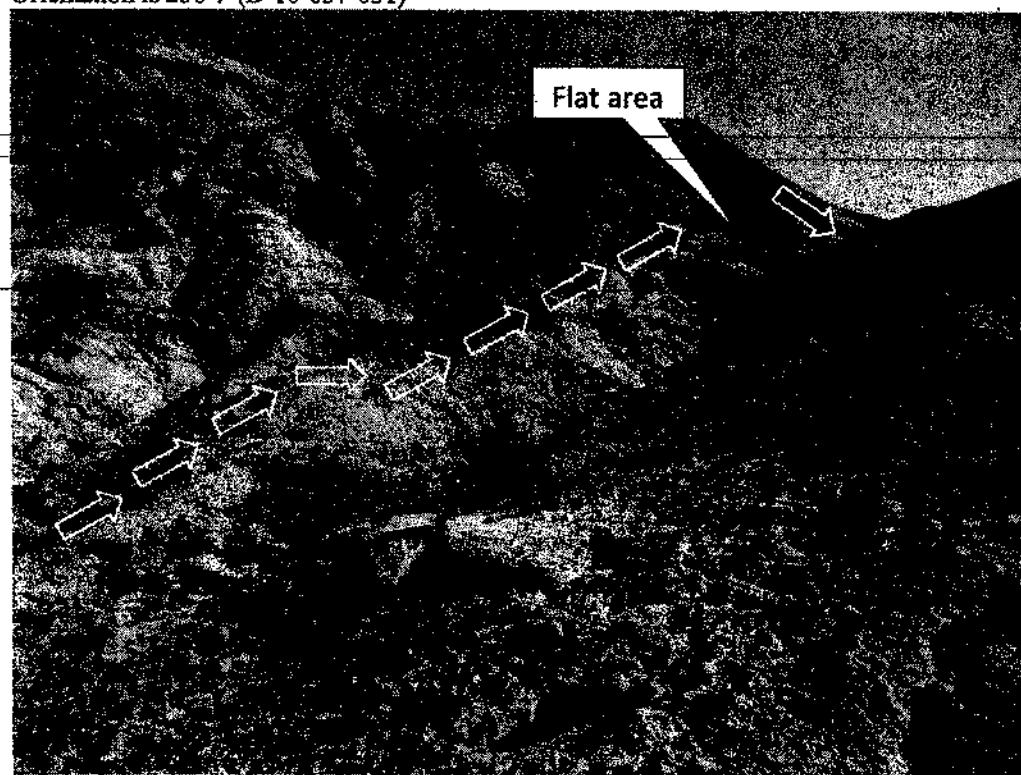


Figure 11. View of ridge leading up from the west drainage to the flat area. Orientation is northeast. (D-10-037-025)

May 18, 2010/August 30, 2010

26CK2148 Main Ridge Proposed Cattle Fence

CRP 10-037



Figure 12. View of the flat area where the east and west drainage fence lines will end at the steep slopes of this ridge. Orientation is 352°. (D-10-037-034)

